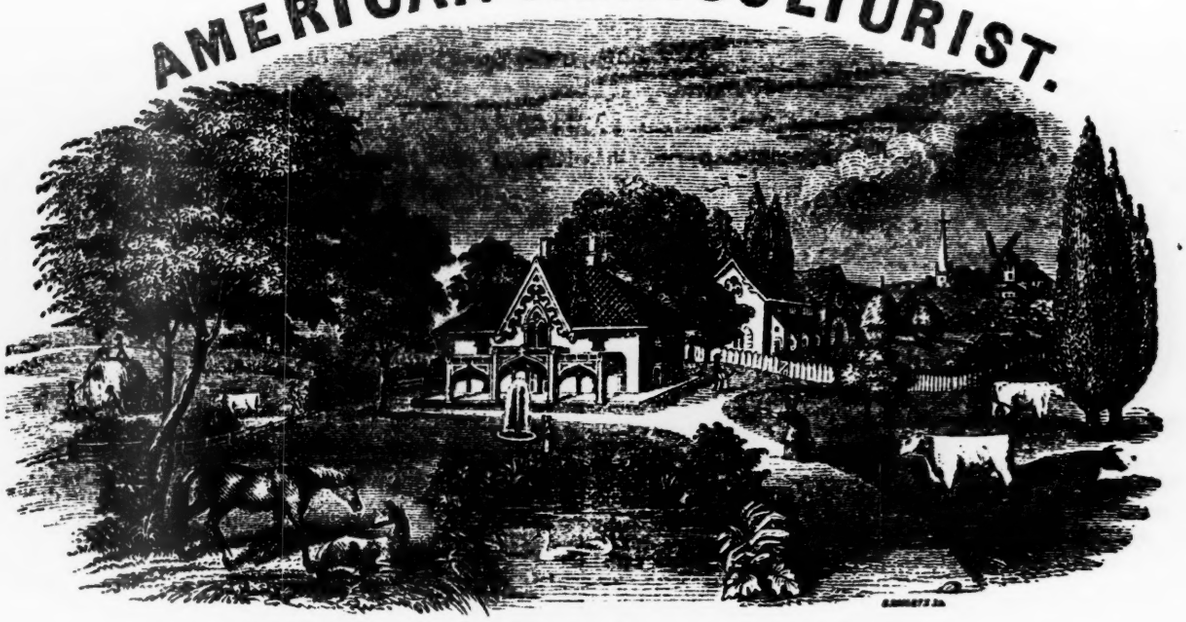
THE

AMERICAN AGRICULTURIST.



Agriculture is the most healthful, the most useful, and the most noble employment of Man.—*Washington.*

VOL. III. NEW YORK, FEBRUARY, 1844. NO. II.

A. B. Allen, Editor. Saxton & Miles, Publishers, 205 Broadway.

HINTS FOR CHOOSING MEAT AT MARKET.

We have often been surprised at the ignorance displayed by housekeepers, in the selections which they frequently make at the market for their family supplies. Many seem to think if they have chosen from an overgrown beast, or bird with large bones, and loaded with masses of fat upon its flesh, that they have been particularly lucky, and secured an excellent dish; when, in all probability, they have taken the very worst, and the least profitable for consumption. In purchasing a quarter of any animal, or pieces from it, we should select such as have the smallest, thinnest, and flattest bones; covered by the finest-grained flesh, with the fat intermixed in thin streaks or layers with the lean. This will almost invariably be found tender, juicy, and profitable. On the contrary, meat with large, round, thick bones, of a coarse grain, and showing the fat in thick slices or large lumps, will prove tough, unsavory, and so far as the profitable part of it is concerned, not worth so much by 25 to 50 per cent. as the finer bone qualities. Poultry which has long, coarse legs, neck, and head, ought to be avoided; while that with short, fine legs, long, round, and plump bodies, and a fine, short neck and head, if of a suitable age, should be preferred. These remarks do not apply with the same force to fish; for several kinds of the most bony are very good eating, although they may not be as profitable as those with fewer bones. The most delicate, however, have rather a small number of bones compared with the amount of meat they give; for example, the salmon, bass, cod, and mackerel of the salt water; and the Mackinaw trout, muscalonge, and white fish, of the fresh water. Very large vegetables are not usually as delicate as those of medium size; but to this rule there are many exceptions. As for fruits, the largest are usually the best.

THE ENGLISH OAK IN AMERICA.

We have been kindly favored by Mr. D. Jay Browne, who is about to publish a work on the "Trees of America," with the following information respecting the English oak, (*Quercus robur,*) as successfully cultivated in this country.

This noble, beautiful, and useful tree was first introduced into the United States in 1802, by Mr. E. H. Derby, of Salem, Massachusetts. He imported six small plants in garden-pots, about eighteen inches in height, which are now tall trees of nearly as many inches in diameter. They have long borne acorns, from which other trees have grown more than forty feet in height, and nine

inches in diameter. These trees are perfectly hardy in our climate, and what is very desirable, as ornamental trees, their foliage remains green at least six weeks longer than the American species. We understand that Mr. Derby has a nursery of about 1,000 young oaks ready to transplant for permanent growth, which he will sell at 50 cents each, single, or at a reasonable discount where larger quantities may be required. We can not too warmly recommend the cultivation of this stately tree, either for ornament or profit.

LIME AS MANURE.

THERE are considerable portions of our country where the application of lime for agricultural purposes has not yet been introduced. When it can be had at reasonable rates, we are satisfied it is in almost all cases a profitable application as a manure. The result of so many and well-weighed careful experiments, would seem to have put its manifest utility beyond any question. In adverting to lime at this present moment, our main design is merely to suggest some of the most obvious occasions for its use.

In almost all soils where lime does not naturally exist, either as pulverized rock, shells, or marl, its application is attended with decided advantage. It may be used at the rate of 50 to 150 bushels per acre the first year, and from 20 to 30 bushels per acre every three to five years after, according to the circumstances of the land, the kind of crops and rotation. We are aware that some will differ with us in recommending the use of so small a quantity; they contending, that where oyster-shell, or stone lime free from magnesia, is used, from 200 to 500 bushels may be safely put on the acre, and then the land will want no further application for ten to fifty years. The objection to such large quantities is, that the lime rapidly exhausts the organic matter in the soil, and it requires a great quantity of manure, and a long time of rest to restore it. If the soil be a stiff clay, and full of inert vegetable matter, such as fibrous roots, undecayed vegetation, or peat, much larger quantities should be used than on lighter soils, and those more free of the above organic matter.

Lime should be applied by dumping it in small heaps, and allowing it to slack to a fine powder by the air, or by throwing water upon it if convenient, and then as soon as this is accomplished, spread it broad-cast upon the land. Sea-water is much better than fresh for slacking lime, as it adds to its fertilizing qualities. Some contend that thus slacked it will have double the effect upon the land; but we consider so great a difference as this a matter of doubt. The reason of allowing lime to slack before plowing it into the soil is, that it absorbs from the air the carbonic acid which has been expelled by heat. It is an unnecessary waste to apply it as quicklime to the soil, and allow it to seize on the carbon it there finds. It is very greedy of carbonic acid, and it will soon absorb from the atmosphere all that is required for its saturation.

After being well slacked and spread, the lime should be plowed in, not too deep, and as thoroughly incorporated with the soil by harrowing as possible. The effect it now has upon the soil is to decompose the vegetable matter, and render it at once food for plants. Lime is almost equally advantageous to all crops, fruit-trees, and whatever constitutes the object of the farmer's attention. Good crops may in numerous instances be grown without the use of lime; but in almost all would they be greater or more enduring with the same quantity of manure. It gives increased efficacy and lastingness to the manure.

On grass-fields, lime may be scattered broad-cast, and its beneficial influence is soon witnessed in the improved health and increased quantity of the grass. Fields thus dressed will resist drought much better than they otherwise would, lime having a greater affinity for moisture, and drawing largely at all times from the atmosphere.

Besides its effect on manures, lime produces a most beneficial influence on many soils. Some of these contain deleterious substances, such as vegetable acids, the salts of iron and manganese, &c. The lime, when brought into contact with these, at once combines with the acids, and converts what was positively injurious to vegetation, into what is positively beneficial to it. The same effect is produced in peat soils which are saturated with tannin and gallic acid. These it combines with, and not only render innocuous, but converts into a substance highly favorable to vegetation. On sandy soils it is very useful by rendering them more compact, retaining the manures, and attracting moisture; while on clay soils it partially breaks up their adhesiveness by insinuating its particles between the alumina, and there undergoing various chemical combinations, it tends to make it more porous.

Winter is the most appropriate time for burning lime, and it may be applied to the land as soon as the snow has melted off in the spring.

NEW EXPERIMENTS IN AGRICULTURE.—We have frequent conversations with gentlemen on the subject of agricultural experiments which they have made, and that are of considerable practical importance. The results of all such as are well known and thoroughly tested, we wish to spread before the community for the benefit of all our readers. Yet such is the modesty of many of our informants, that they seem unwilling not only to communicate the information over their own signatures, but are even reluctant to have it mentioned in any shape. We hope all our friends will have done with such diffidence, and give to the public at once what rightfully belongs to it. No improvement, however minute, is without its use to the agricultural community, and whatever will save a single dollar to each farmer in the United States, will save millions to the nation.

SKETCHES OF THE WEST.—NO. III.

LEXINGTON.—From Versailles we rode over a beautiful undulating country, and in a short time arrived at Lexington. This is a very handsome town, of about 6,000 inhabitants, and presents the appearance of considerable opulence. The streets are regularly laid out, a branch of the Elkhorn meandering through the town, and in its clear course adding much to the beauty and variety of the place. A richer or more favorable agricultural district can not be found than that which surrounds Lexington in a circle of 60 miles. Added to this, it is healthy, and settled by a highly intelligent and enterprising population. In fact, the people here consider it as approaching Eden, and it is very agreeable to hear them amplify on its capabilities, which they do, and very justly, with an eloquence that can not be gainsaid. The Kentuckian yields to none in love of his country, and the western hemisphere may be travelled over in vain in search of one more deserving of being loved.

ASHLAND, SEAT OF THE HON. HENRY CLAY.—This beautiful seat and superb plantation, of one of the most gifted and celebrated men of America, is about one and a half miles from Lexington, and is approached by an excellent Macadam road leading directly by it. We called there in company with a nephew of Mr. Clay, Mr. Pindell of Lexington; who took us by a circuitous road, first showing us his own fine plantation, a little beyond that of Ashland. The buildings on it are handsome and commodious, and there was a choice collection of stock of all kinds, particularly of blood horses. One of the fillies, the name of which we have forgotten, struck us as being as promising an animal of her kind as we saw in Kentucky. Mr. P. had repeatedly exhibited her at their agricultural shows, and she had invariably carried off the first prize over all competitors.

A division-fence separates the property of Mr. Clay and Mr. Pindell, which we passed by a wide gate and came immediately into the woodland, or more properly speaking, park pastures of Ashland, the trees of which are mostly the reservations of the original forest. They are grand and majestic in their appearance, and give a dignity, comfort, and beauty to the landscape, which can not be too much admired. It was still in the month of January, but the winter being a mild one, the grass was yet green, and a fine lot of blood horses, and Short-Horn cattle were out feeding, and looking as fat and sleek as need be. The show of these, Mr. Pindell informed me, was not so good as formerly, Mr. Clay having been tempted, when high prices prevailed, to part with the greater proportion of his choicest animals. After taking a full view of the plantation, we came round to the stables, the most celebrated incumbent of which was a large French Jack, named Royal. He was selected by Mr. Henry Clay, Jr., when he visited France, and was bred at Poitou, near the birthplace of the celebrated Montesquieu. Whether from this circumstance Royal has inherited any of the legal talent of the profound jurist we are unable to say, he not yet being gifted with the power of speech to explain himself, as was Balaam's ass of old; but what, perhaps, is of more utility where stationed is, he has the faculty of stamping his superior size and strength on a numerous progeny of mules, to the great benefit of the country around him.

When we called at Ashland, Mr. Clay was passing the last of his term at Washington in his senatorial duties; we, therefore, missed the advantage of seeing him at home on his farm, where he is universally acknowledged to rank as high as in the councils of the nation. He has ever been foremost in every good word and work in agriculture in Kentucky, and perhaps few have done as much to assist in developing and improving the resources of his native state. No one was more ardent and persevering in the introduction and growing of hemp than Mr. Clay; in the introduction also of improved stock, and all other measures calculated to promote agriculture, which, although well known at home, yet, on account of his brilliant forensic talents, his labors and example in this department, have in a measure been overshadowed and kept hid from the nation.

The mansion-house at Ashland is roomy and handsome, and such as a refined country gentleman may have been supposed to erect for his own comfort and convenience. The grounds are ample and beautiful, abounding with what we most admire in winter, a profusion of lofty evergreens. The views from the spot are charming, embracing the town of Lexington just beyond, and a fertile country of considerable extent in quiet repose around. In the absence of Mr. Clay, his respected lady received us very politely, and we found her presiding with equal dignity and grace over the affairs of the household; where, to her honor be it spoken, and also in the general management of the plantation, she as eminently excels, as her husband in the Legislative Halls—proving herself an admirable wife for one whose public duties have so often called him away from his home.

We are fearful of trespassing upon the sanctity of private life by dwelling longer upon this theme, and will only add that we felt no less honored than gratified by our visit to Ashland, and at our departure could not but breathe more strongly than ever, the wish that its possessors may soon be transferred by the voice of this great nation, to that exalted seat which their eminent talents and virtues have so well fitted them to adorn and fill.

Tour in England. No. 17.

An English Farmer.—Gazing over the stock that weekly graces the market square of the ancient town of Abingdon, and occasionally chatting with its sturdy owners, among others we were particularly struck with the fine appearance of a young farmer of some six and twenty, who was chaffering for a lot of sheep. He was dressed in white top boots, drab breeches, linen faultlessly clean, a black hat with rather a wide brim, and, instead of a coat, he wore the common farmer's-frock of the country, covering his under dress, and reaching down to the tops of his boots. He stood full six feet high, with broad shoulders, full chest, and in his whole person was a model of health, strength, and manly beauty. In his hand he held a long whip, and when we first observed him, he was bargaining for a lot of sheep with a wiry looking old man, in leather gaiters, and hob-nailed shoes. We were looking for some stock of a particular kind, and had been informed that the young man before us was considerable of a dealer, and that he would be able to furnish whatever was wanted.

After finishing his bargain for the sheep, which judging from the loud cracks and abundant flourishes he gave upon winding up with his whip, seemed to be quite a gratifying one, we jogged him on the shoulder, and made known our wishes. He said he had not the stock himself, but if we would go home with him and stay a few days to make some excursions, there was no doubt he would be able to procure all we wanted. This was just the thing to suit, so we unhesitatingly accepted his frank invitation; when, giving directions to a fat, pumpkin-cheeked boy who was accompanied by a sharp-nosed colly dog, (just the antipodes of his own,) to drive home his sheep purchase, we walked down to the inn, where, after smoking a long pipe, and sipping a silver tankard of strong beer, in both of which operations he greatly wondered that we declined joining, he ordered up his bob-tailed cob and spring cart, and away we trotted at an easy pace over a smoothly gravelled road, discoursing upon all sorts of farming matters—we perfectly astonishing him with a few *long-bows* which we took the liberty of occasionally drawing by way of variety, on the fertility and productions of our own country.

His residence was some ten miles or so from Abingdon, on the further edge of one of the oldest hamlets we visited in England; situated in a smooth gorge of a valley, and lying scattering along a narrow winding road for about a quarter of a mile. The farm was a small one of 79 acres only; the out-buildings old and rather inconvenient. We arrived here at twilight, and as there was no road to the front of the domicil, we found our way there by first bringing up in the stone-paved barn-yard, from which a wicker gate led through a small patch of a garden; to this was joined a few square rods of lawn, and at the end stood the cottage, a genuine antique throughout, with thick brick walls; dark oaken door, diamond-pane windows leaded in iron sashes, and low thatched roof. What a contrast to the smart white paint, and green Venetians of our own country! But if things looked old and somewhat gloomy without, they were extremely neat and comfortable within. The presiding genius of this was of course my friend's wife—a fair, nice woman, though not equal in personal appearance to her husband. She informed us that she not only attended to the affairs of her small household, but milked the cows, and did all the light work in the garden, and kept the lawn and its few flowers and shrubbery in order.

Supper was soon made ready, to which we needed no second invitation, as in the case of the

pipes and beer, but set down at once, and did ample justice to all before us. When we retired, we were shown to a low chamber in the gable-end of the attic. It was sufficiently roomy, and perfectly neat—the linen, spread, and curtains of the bed as white as the driven snow. On a small, half-round table lay a few books, which were precisely those, with one exception, we are most certain to find at the farm-houses of our own country; being the Bible, Pilgrim's Progress, Baxter's Saints' Rest, Tusser's One Hundred Points of Good Husbandry, and a volume of Tracts, among which the first we opened to was that beautiful tale, by the Rev. Leigh Richmond, of the Dairyman's Daughter. This we first read when a mere child, with an impression and interest that no story in our subsequent multifarious reading has ever surpassed. Reposing upon our pillow, we snuffed the flickering candle, and here, in the country which gave the author birth, and not far from the scene of the tale itself, again went over its absorbing incidents. How many brilliant romances, filled with the vanities of this world, will rise and fall—even the very names thereof perishing from the earth, when this true and simple story, of a meek and lowly Christian maiden, shall become more and more widely known, and flourish. God bless the authors of such heavenly tales!

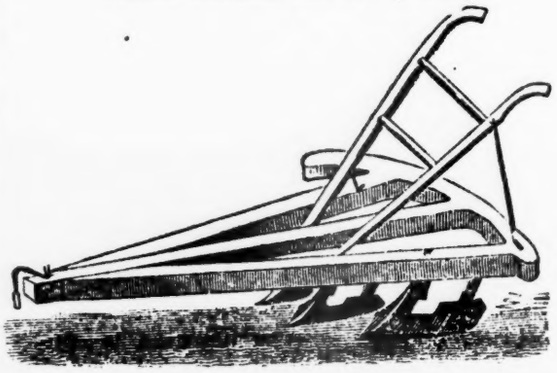
The farm, as we said, contained 79 acres; the four-course system was adopted upon it, and in most things it was a model of cultivation. The first year the land was manured and sowed with turneps and mangel-wurzel. These were principally fed off by sheep consuming them on the ground, and of course richly manuring it with their droppings. This was sowed with barley and oats, with grass-seed or clover in the spring, which occupied the second year. The third year, the grass and clover was pastured by enclosing the sheep with a moveable hurdle-fence, on an acre or so of the grass, and as soon as this was eaten, the fence was moved on to another acre, and so continued till the grass was all fed off. The sheep thus leave their manure scattered over the land as evenly as it can be done with the shovel; it is then plowed and sowed to wheat. Wheat, we were informed, after clover fed off by sheep, is found to suffer less from mildew, rust, the fly, and indeed all diseases to which it is liable, than by any other preparation by which it is grown in England. This is a much superior method to plowing in clover for wheat as practised in our own country. Green crops beneath the earth undergo a rapid fermentation, and turn all their sugar and starch into gases, which are lost in the air, and vinegar which washes away, and leaves the soil so sour as not unfrequently to require rest, or the application of lime to restore it to a fit state for cropping. How much wiser the English to turn the sugar and starch of their grass into mutton and wool, and then have their land left in a much more perfect state for a wheat crop. We are satisfied that the system of feeding off clover in our own country with sheep, preparatory to a wheat crop, would pay as well as in England. We have strongly urged the measure upon several of our friends since our return, but have not yet succeeded in getting one to adopt it; we hope to be more successful hereafter. But to return to our subject.

This young man paid in rent and taxes for his land 37*s.* 6*d.* per acre, which is £143. 2*s.* 6*d.* (say $700.) The first year he took the farm he had 15 acres of wheat, which averaged 29 bushels per acre; but by superior management, on the third year he had increased the crop to 41 bushels per acre, and had 20 acres in wheat. This, the fourth year, he calculated confidently the wheat would average 43 bushels per acre, and judging from the appearance of the crop when we looked at it just before harvesting, we thought he had not overrated it. His wheat was of a superior quality, and would be worth, as soon as he could get it to market, 73s. the quarter, or in round numbers, $2 per bushel our money; allowing that the 20 acres only yielded 40 bushels per acre, this would be 800 bushels, worth $1,600. Then he had 20 acres in barley and oats: the former did not look so well, and would not be over 27 bushels per acre, which was attributed to bad weather and late sowing; but the latter made ample amends, and he estimated them to yield over 70 bushels per acre. That we may be fortified in our statements, we shall add, that a neighbor of his with whom we conversed, and a very reputable man, informed us that he had raised 96 bushels of Tartary oats to the acre, 50 of wheat, 58 of barley, and 51 of beans. What the value of the oats and barley were likely to be we neglected to note. Twenty acres were in turneps and other roots; 15 acres in vetches, clover, and grass, with which he was feeding off his sheep, and 4 acres for buildings, garden, and a small paddock for two cows. He kept a flock of about 50 sheep, on which he probably cleared $3 per head, he not breeding them, but buying in and fattening, and then sending them to market. This made $150 more. In addition to these he had a few pigs, two cows, and four horses. The horses

were stabled all the year round; the cows roamed in the paddock in summer, and were stalled as occasion demanded; the pigs graced the barnyard, and with this stock, straw, and other resources of the farm, sufficient manure was made, with the additional purchase of a small quantity of lime and bones, to heavily manure for the root crops, and regularly advance the fertility of the land. Thus the gross income from 79 acres of land, would not be less that year than $2,500, estimating ten acres of barley at $270, ten acres of oats at $380, pork and product of the dairy $100. As he worked on the farm himself, his labor probably did not cost to exceed $300, which, added to the rent, make $1,000, leaving a round profit of $1,500. The expenses of supporting a family, wear and tear of implements, &c., &c., were probably about the same with this young man, as they would be with one of our own countrymen, on a farm of one hundred or a hundred and fifty acres. Prices of produce in England have probably fallen one third since we were there; but even then, this farmer would be doing a good business. As he was of ordinary education, we asked him how he got the information which enabled him to manage his farm so well. He replied, by the common practice of the country, and by books, though more by attending their farmers' Club meetings, where the best course of cropping, management of lands, manures, improved seeds, stock, and agricultural implements were discussed among a considerable body of intelligent farmers. Thus it is, and with enlightened landlords to occasionally direct and instruct, and bestowing more labor upon less land, that the English are so much our superiors as a general rule in exact and scientific cultivation, and we fear we must add profitable farming.

Being capital stock himself, our friend was successful in showing us what we wanted, and as he had given us some good lessons on farming, we could do no less than drop a few hints in return. He used a double-wheel, awkward, old-fashioned plow, weighing little less than 300 lbs. To this was attached in line, (one before the other,) to drag it, three large, coarse horses, very fat, and slow moving. It took a boy to drive them, and a man to hold the plow, and they averaged, we believe, not much over an acre per day. We assured him with a lighter and better made plow, and smaller, quicker stepping horses, a single pair and a man to hold and drive would easily accomplish more work than he was now doing. We also advised changing the mangel-wurzel for sugar-beet, as it would yield full as much per acre and was more nutricious, and thought white carrots would eminently succeed on a small portion of his soil. All these he promised he would adopt as speedily as possible; but as English farmers, like our own, are slow in changing for "new-fangled notions," we are somewhat doubtful whether all our suggestions are yet carried out. We hope to cross the Atlantic again one of these days, when we shall make it a point to ascertain.

THREE-SHARE PLOW.—(Fig. 6.)



Above we give a cut of the Three-Share Plow exhibited by Mr. Thorp, at the late show of the American Institute, and we hope that Mr. Potts and any other of our southern friends who feel an interest in the matter, will give us their opinions upon its applicability to the culture of the crops at the south, and also suggest any improvements which may be thought advisable. The sketch shows the construction of the instrument so perfectly, that it needs little description. It spreads 2 feet 4 inches wide, and its shares are precisely like those of the common plow, only very much smaller. We should think it would not weigh to exceed 90 lbs., which is a light draft for a pair of mules. By passing it once up and down between the rows of corn, cotton, or cane, it will completely turn up and bury the weeds and grass, and at the same time slightly throw the soil between the rows, to or from the growing plants, or leave it nearly level, as is desired. If it be wished to throw more soil to the rows of cane, &c., a one, or two-horse plow can be run down on each side of the rows, turning the dirt toward them, and then follow with the three-share plow. The only suggestion which we can make as an improvement to the above, is to add a wheel at the end as in the ordinary cultivator. This would make the draft easier, and enable the plowman to go deeper or shallower in the soil as required. Mr. Weird exhibited a four-share plough at the same time, but as he did not leave it at the American

Institute, we can not give a cut of it. Shares may be multiplied to any number, so as to clear out furrows from four feet, to as much greater width as desirable.

FOREST LEAVES AS MANURE.

It is well known that the leaves of trees make a most valuable manure; but they are so light of weight that it is rather troublesome gathering them. Mr. Cadmus, of Long Island, has given us his method of collecting them, which we think is the best we have yet heard of. He takes a common dung-fork, and striking it lightly into the surface soil, when not frozen, which the leaves cover, it will easily peel from the subsoil from one to three inches deep. As it is loosened in this way roll it over on the leaves, and as soon as a good fork full is obtained, throw it into the wagon. The leaves and top soil are thus taken up quite rapidly, and the latter weight for weight, for many purposes, is scarcely less valuable than the former. They make one of the very best manures for nurseries, orchards, and gardens. Along their sides, and particularly in the corners of fences, large quantities of decayed leaves and rich soil may be found; and we know of nothing more valuable to be mixed with manure in the barnyard, or to make a compost of with lime, ashes, charcoal-dust, and other substances.

MANAGEMENT OF STABLES.

At a late meeting of the Royal Agricultural Society of England, Mr. Reece submitted a paper, detailing several experiments in the disinfection of stables, by the absorption of ammonia generated in them, which we briefly copy.

The stables were, in the first instance, strewn with gypsum, (crystallized sulphate of lime,) coarsely powdered; but though the ammonia was evolved from the wetted straw, no trace of it was visible after two days' exposure when examined with slaked lime. The stables were then strewn with the gypsum moistened with sulphuric acid, and when examined next morning, every portion was found to have absorbed sufficient ammonia to emit its peculiar pungent odor when brought into contact with slaked lime. The stables had lost their close, unhealthy smell, and, to use the words of the grooms, appeared to be quite sweetened. As it was evident the gypsum acted merely mechanically, affording a convenient absorbent surface for the acid, some further experiments were made, substituting sawdust for gypsum, which were attended by still more favorable results. The prepared mixture should be laid upon trays, as the acid is considered likely to injure the horses' feet. One part of sawdust will readily absorb three times its weight of acid solution, which would be mixed in the proportion, by measures, of one part of sulphuric acid to fifteen of distilled water. The ammoniacal salt makes an excellent manure, but it should not be mixed with the straw until after removed from the stable.

Now we must be allowed to doubt the efficacy of these experiments in the fulness with which they would seem to be commended to us. That some of the ammonia is absorbed by the sulphuric acid is not questioned; but that it takes place to anything like the absorption of all, or nearly all the ammonia generated, may well be doubted. We would like to see the experiment, however, by some of our citizens who would send us the results. The ammonia is very injurious to the eyes of the horse, and the groom, and frequently is the cause of severe inflammation.

Sulphuric acid diluted with about 50 parts of water, and sprinkled on the straw, where it would come directly in contact with the ammonia, would be much more likely to seize upon and combine with it; and weakened to the extent suggested, it would not probably injure the feet of the horses. But we think charcoal strewed in and around the stables would absorb it equally, or even more effectually at a cheaper rate, and with greater advantage to the manure.

TOOLS FOR BOYS.

Has your father a carpenter or blacksmith's shop upon his farm? If not, get him to build one of each immediately; and whenever he hires a carpenter or blacksmith to come and do his odd jobs, be sure you go in and look on and help until you get the use of every tool in each shop. You will be several years in doing this, so don't be discouraged if you can't do all your little work to please yourself at first; your hand-sleds, your steers'-sleds, and steers'-yokes. Martin-boxes and hen-coops you ought to make yourselves, together with many other things; and then there are the farming tools —all ought to be of a size suited to your age, and of the best quality. Some fathers turn off their boys with old wornout tools; this is wrong, you ought to have a little scythe and a little axe, both very sharp, and then you ought to be taught how to keep them so; and also how to use all your tools skilfully. Never slight any kind of work, but do it well, and if you can not keep up with older persons laboring at the same thing, they ought to help you rather than let you lag behind. Never indulge a lazy spirit; your father or guardian will see that you are not over-worked, and will always give you sufficient time to rest

and go ahead with your studies every day; yet you will do more work than those dull-heads who neither read nor study at all. Farming work, above all others, is the best to make boys grow, and give them strong and vigorous constitutions.

LECTURES ON AGRICULTURAL CHEMISTRY.

Dr. Gardner has already delivered nine lectures on Agricultural Chemistry, at the University of New York.

1. On the composition of the air, its absorption by soils and fluids, the character of the gases of the soil.

2. On the passage of fluids through vegetable and animal membranes, and its importance in vegetable phenomena.

3. The structure and functions of plants.

4. The sources of carbonic acid as food for plants, showing the necessity of humus in the soil for the cultivation of many plants.

5. The sources of nitrogen, and means of increasing it in the soil.

6. The oxygen and hydrogen of plants, and the processes of fermentation, decay, &c.

7. The saline composition of plants, and its importance to the vegetable.

8. The value of fodders, time of cutting grain, clover, wheat, &c.

9. The physical character of soils, and the means and objects of pulverising, draining, fallowing, &c.

We had notes of these very excellent Lectures, and intended to have given a synopsis of them in this number; but owing to the crowded state of our columns, we have found it quite impossible. They have been listened to by a large class in attendance with high gratification, and we are pleased to learn, that they have excited so much attention in the public mind in this city, that Dr. Gardner will probably be called upon to repeat them. For the good of the agricultural public we really trust that this may be the case.

ANNUAL MEETING OF THE N. Y. STATE AG. SOCIETY.

We are favored by a friend with a short note, detailing the proceedings of the State Society at its late annual meeting on the 17th of January, at Albany, and are also indebted to the Cultivator for a proof sheet of the same in advance of its regular publication; but unfortunately both came too late for an insertion this month, our paper, with the exception of this page, being made up. We have only space for a short notice. No annual meeting was ever so well attended, and uncommon interest seems to have been imparted to its proceedings. The next show, (we will not use the improper word "*fair*,") is fixed to be held at Poughkeepsie, at which we are rejoiced, as we think it is justly due to the southern and eastern portions of the state. We shall now expect to see the Hudson river counties exert themselves. We are of opinion it will be the largest meeting, with the great est agricultural display, ever yet made in the state. Now would be an excellent time to revive the Hudson river Horticultural Society, and have it hold its show jointly with the State Society. All the late officers of the Society declined a re-election. Dr. John P. Beekman, Columbia, is chosen President for this year; Benjamin P. Johnson, Rome, Cor. Secretary; Henry O'Reilly, Albany, Rec. Secretary; Thomas Hillhouse, Albany, Treasurer. The State Society has $3,000 in the Treasury, over and above all its last year's expenses, which is a clever sum to begin the year with. We particularly regret the resignation of Mr. Prentice, as there are few better keepers of the strong box.

MANAGEMENT OF YEARLINGS.

To those who have the time to attend to it, we say, stable and tie up your yearlings, both steers and heifers; curry or card them at least once a day, and if you can afford them a few roots so much the better. Such treatment makes young cattle tame and docile, and you will have no trouble in milking them when they have calves, and if intended for family cows, they may be made to eat all kinds of slops and other rubbish from the kitchen. The steers also should be broken the winter after they are a year old, and for this purpose the farmer wants his small yokes, sleds, chains, and whips—the latter to be used very sparingly. Break steers well at this age, and there will be no trouble in doing it when they become oxen.

Our Subscriptions.—Three times as many subscribers have flocked in upon us this month for the Third Volume, as we received during the first month of our Second volume, and a large share of these we are glad to see are new ones. We are highly gratified at this flattering testimonial of our labors by the public, and hope to record at least Ten Thousand good and true names upon our subscription list before the close of the year. We trust our friends will continue to exert themselves on our behalf. Every present subscriber can get at least two more, and many might send us from eight to sixteen additional names.

ORIGIN OF AYRSHIRES.—Mr. William Aiton of Hamilton, in a communication made to the British Farmers' Magazine in 1826, Vol. I., page 149, says: The dairy breed of Scotland have been formed chiefly by skilful management, within the last 50 years; and they are still improving and extending to other countries. Till after 1770, the cows in Cunningham were small, ill-fed, ill-shaped, and gave but little milk. Some cows of a larger breed and of a brown and white color, were about that time brought to Ayrshire from Teeswater, and from Holland, by some of the patriotic noblemen of Ayrshire; and these being put on good pasture, yielded more milk than the native breed, and their calves were much sought after by the farmers.

In addition to the above, we were verbally assured when in England, by some old breeders who had known the Ayrshires since 1780, that they had received more or less improvement from crosses with Short-Horn bulls for the last half century, and although they may now be considered a good established breed in themselves, they are, in reality, merely high grade Durhams. Is there any error in this statement or not? If so, we shall be glad to have those who have made the origin of this breed more of a study than ourselves, give us any new information on this subject. We do not wish any reference to Youatt's account of them, as that is already familiar to the public.

NEW YORK FARMERS' CLUB.—This Club held its regular meetings the past month, in the reading-room of the Repository of the American Institute, on the first and third Tuesdays at 12 o'clock, M., continuing them till 3 o'clock, P. M. They were both well attended, and the subjects of discussion were the disease in potatoes, adulteration of milk, lactometers, and subsoil plowing. All these matters have been so fully treated in our previous volumes, that we have not thought it worth while to give an extended report. The meetings will continue regularly, commencing at 12 o'clock on the first and third Tuesdays of each month. They are free to all, and no fee or ceremony of admission will be exacted. Gentlemen from the country are particularly invited to attend.

TO MECHANICS—AGRICULTURAL IMPLEMENTS.—We are constantly in the receipt of orders for the purchase of different kinds of agricultural implements, and the venders of these will find it much to their interest to forward us cuts of the same, accompanied with brief descriptions, and stating their prices.

CULTURE OF POTATOES.—We beg attention to Mr. Pell's excellent article on this subject in our present No. He has left samples of his improved pink-eyes at our office, which can be seen by those who have any curiosity on the subject. They are of good size, have a smoother skin, and are freer from eyes than any we have yet seen. We are informed that they are very mealy and nutritious. Mr. Pell candidly states that they are rather *shy* bearers; but with good treatment, he seems to have made them satisfactorily *tame* in this respect.

POLAND FOWLS.—Those advertised for sale by Mr. Starr we know to be very superior. They are of the shining black kind, with very large white top-knots. To our eye they are the most beautiful of domestic fowls, and are such famous layers that other hens must be kept to hatch their eggs.

AGRICULTURAL AGENCY IN LONDON.—We desire attention to the advertisement of Mr. P. L. Simmons, No. 18 Cornhill, London, for books, periodicals, &c., &c. He has also commenced Simmons' Colonial Magazine, which is published monthly, price 2*s.* 6*d.*

THE AMERICAN AGRICULTURIST GRATIS.—Let it be remembered that any one can have a volume of our paper gratis by procuring us two subscribers and forwarding $2. The terms are Three Copies for Two Dollars.

HOW TO MAKE THREE DOLLARS.—Procure eight subscribers to this paper, receiving from them Eight Dollars, Five of which only need be sent to the publishers, to entitle the person so remitting to the eight copies—he will therefore have $3 remaining to put in his own pocket. Many persons might thus benefit themselves, and at the same time be doing a great good to the public. Agencies of other books will be given by the publishers with this paper.

HORTICULTURE.—As prosperity is again restored to our country, it is satisfactory to perceive, that little comforts and luxuries are beginning to be attended to again. Among these, perhaps, some will class fruits; but our opinion is, that with proper attention to them, they may become something more than this, and in a few years be no small item of exportation to foreign countries. We believe few doubt that good ripe fruit is eminently healthy, and it is certainly proved so in the south of Europe, as many of the peasantry in certain seasons of the year almost entirely live upon it, and yet none enjoy a better state of health than they. The fruit culture is assuming a new aspect in this country, and we begin a series of articles on it, which will be regularly followed monthly through the year, by several of our friends who have been long practically engaged in the business. What they have to say, therefore, on the subject, will be entitled to the confidence of our readers. The growing of choice fruit in a proper location, we have repeatedly contended must for a long series of years be a good-paying business.

☞ OFFICE HOURS.—Owing to his avocations elsewhere, the editor of this paper will more usually be found at his office from 12 o'clock at noon, till 2 P. M., at which time he will be pleased to see all who may be desirous of favoring him with a call.

ORIGINAL CORRESPONDENCE.

STOCK OF PETER A. REMSEN, ESQ.

The western part of the State of New York has, for some years, possessed several large herds of cattle of great excellence. Among the largest and best for a long time, was that of Peter A. Remsen, Esq., of Alexander, Genesee county. This gentleman has, during the present autumn, removed with a large reserved lot of his herd as it stood in 1842, (having sold from it, as a draft, some one hundred and twenty-five head during 1842 and 1843,) to Maryland, where he proposes making his future residence. His departure to a distant state, and to a home among strangers, prompts me to a notice of himself and his stock, due alike to both, that his neighbors among whom his new lot is cast, may know how Mr. Remsen and his stock were valued by those whom he has left, and among whom for many years he and his family dwelt. The prize-list of the late State Agricultural Show has heralded his cattle abroad, and, of course spread their fame in advance of themselves to their place of destination. Their success, so widely known, carries with it a high recommendation; and this might render any notice unnecessary, had any agricultural paper, either of itself or through its correspondents, given any account of his herd, or had his imported cattle and their descendants been placed on record. This not having been done, allow me to do it, and at the same time, seize the occasion to speak of him as a man, as well as a breeder.

Mr. Remsen, although a northerner, was for many years resident in Alabama, and mostly at Mobile. Engaged largely in trade, he yet possessed and cherished a fondness for stock, the result of early occupation and education, and his wealth was used as a means of gratifying his tastes. In 1831 he purchased a large estate in Genesee county; it was most judiciously selected, just at the base of the hills which form the grazing country of the south part of the county, and at the head of the alluvial valley of the Tonawanda, covering both the valley and the last spurs of the subsiding hills. Here the upland has lost its exclusive grass-growing character, and is equally adapted to the production of hay and grain. Its position is commanding, giving views of great extent and beauty. From the uplands beautiful brooks of the purest water flow down in profusion upon the intervale. Upon it he erected a noble mansion, a fine feature in the landscape as viewed from the vale below, and looking down on that vale of beauty, each adding to the charm of the other. Here Mr. Remsen made his summer residence, and his family their permanent one. With an enterprise worthy of his means and his tastes, he ordered from England the nucleus of a herd of cattle. The commission was for the best, without limitation of price. The execution of the order was intrusted to Mr. Wilson, to whom it was given, to Mr. Samuel Scotson of Toxteth Park, Lancashire, a breeder, widely and favorably known. Mr. Scotson, through his friend Mr. Robert Thomas of Engholme, near Darlington, procured a bull and a heifer, bred by Mr. Maynard of Harsley Hall, Yorkshire. From Mr. Severs of Richmond, in the same county, was purchased another heifer; and to these was added a selection from the herd of Mr. Scotson, consisting of a young bull and a heifer. This importation was made in 1834. At a subsequent period, Mr. Remsen increased the number by a heifer from the herd of the Rev. Henry Berry, and a heifer from another source in England, which, however, died without produce. To these was added a selection of American bred cattle. With such materials for an origin, a herd large in number, beautiful, and choice, soon spread itself over his fine lawns, alluvial meadows, and swelling hills. At once, was Mr. Remsen among the first breeders of New York, indeed, of the country at large; and richly was the sagacious enterprise which created all, rewarded. His tastes were gratified, and his investment profitable; his pleasures and his interests at once coincident. An immediate demand sprang up, and so great was it, and so superior were even his grades, that he repeatedly sold them for prices as high as thorough-breds would command; and this demand continued until the present depressed value of cattle checked all desire and inducement to rear or acquire stock, either crossed or pure. In all this Mr. Remsen had a most capital assistant in his interesting wife. Like him she possessed a fondness for a rural life, for flocks and herds. Among them she found consolation for the absence of her husband, whose business yearly called him south, and for many months detained him there. In her he found a guardian to whom he could well intrust them, assured that a taste congenial, an interest identical, and a judgment scarcely inferior to his own, would be ever watching over and superintending them, and of course in his necessary absence during the winter, the care and direction of the herd were hers. As a proof of her good management and tact, I may mention that she frequently sold grade cattle, both heifers and bulls at prices as high as $150. Added to this business ability in Mrs. Remsen, were all the charms which render the woman and the wife interesting—amenity, frankness, intelligence, and polish. Is not this a wife indeed?

Among Mr. Remsen's selection of grade cattle in the formation of his herd, were some cows with a Devon and Short-Horn cross. They were the get, in part, of the fine Devon bull Holkam, bred by the late William Patterson, Esq., of Baltimore, from the herd of the late Earl of Leicester (formerly Mr. Coke); in part, of the Otto bull, a Short Horn; and, in part, the get of Holkam upon the cows got by the Otto Bull. From these Devon Short-Horns Mr. Remsen has reared oxen and steers whose equals are rarely, and whose *superiors are never found*. He has now a yoke of oxen six years old, (which received the first prize for working oxen at the State Show at Rochester), which have been worked every year since they were two years old, *and have never been fed* anything but hay and grass, that weighed 2,300 pounds each, in September last.

It would be useless and too prolix to attempt an enumeration of all his cattle, full-bred and grades.

His herd last year consisted of one hundred and sixty head. He has reduced it at present to about fifty choice and beautiful cattle, both pure and grade. A pleasure it is to see them—a pleasure it must be to own them.

Mr. Remsen showed a number of animals at the late show of the State Agricultural Society, as did other gentlemen, and in every instance save one, the cattle on the ground from his herd were winners of prizes; and the animal which did not win, was specially commended by the judges of his class. Here was a breeder's success and a breeder's honors, and his triumph was as grateful to his friends as to himself.

I give you a list of the thorough-bred cattle and their pedigrees. (*a*) A. S.

(*a*) We are reluctantly compelled to forego the publication of the pedigrees of Mr. Remsen's animals, so obligingly furnished us by our correspondent, for this reason: if we did it for *one*, we must do it for *all;* and it would thus be occupying more space in this periodical, of what properly belongs to a herd-book, than the general readers of the Agriculturist would feel was allowble. We hope soon to see a Herd-Book of American Short-Horns published in this country, for it has become a work much wanted.

What our correspondent says of Mr. Remsen's stock, it affords us great pleasure to add, from our own knowledge of it, is strictly correct. Mr. R. is now placed in a position to serve the south and west, and to all in that quarter we earnestly recommend his breeding. He has been long and well known at the south, and his address till the last of May, will be Mobile, Ala.

THE PEACH-TREE.

So MUCH has been written on the subject of the diseases of the peach-tree, but in reality to so little practical advantage, that it requires some assurance in any one to sit down to occupy the time of your readers on the subject,—yet we must take the naval motto, "Don't give up the ship." If nothing new should be set forth in this article, the writer hopes to correct erroneous opinions, and to present certain facts in relation to this tree, which may assist others to discover a better remedy for its disease than that recommended.

The peach is *Icosandria Monogynia*, and can be worked on the wild and domestic plum, cherry, and almond. It is supposed that the peach is produced, by culture, from the hard-shell wild almond. So far as relates to the stock, the domestic plum appears to suit the graft or bud. The writer has tried the wild-plum stock—the trees in the instance referred to did not grow thriftily. He has young peach-trees worked on cherry-stocks, apparently doing well, the peach part is of no unusual appearance.

In considering our subject, we start with this fact, that from the earliest tradition, we hear of the peach in our country; it was the most abundant and the most prolific of the fruit-trees in the states of New York, Connecticut, New Jersey, Pennsylvania, and the adjoining localities. This abundance of fruit continued in eastern New York until about 1812 or 1815, when the trees began to decline, and have continued to decline, until they may now be said to be extinct, as bearers, in at least some of the referred-to localities. In its former state of healthful growth, it was to be seen in the richest grounds; in all soils and situations; occasionally taking an accidental position, amid thorns and briers on the side of the blind walls of some neglected farm; and sometimes in the tough sod of the highway. They grew as food for man and for swine,—neither were stinted.

A full-grown healthful peach-pit, planted in the fall, grows four feet high its first year, with a smooth, bright-yellow bark, and green foliage. The second year it grows well also, and the only thing to be discovered is a small worm (called in popular language the peach-grub) at its root, about an inch below the surface of the ground. The wound made by the grub is hardly perceptible, but its presence is traced by a small quantity of gum, colored red by the gimlet-like borings of the insect. The grub, if neglected, the third year will have girdled about one quarter of the bark of the tree; but the tree will not show, in its leaves, any disease—on the contrary, it will blossom and produce a dozen or more of good peaches. The fourth year the grubs continue their borings of the tree, perhaps one third of the bark near the surface of the earth is girdled; but the tree is slightly affected; the leaves in May and June, become red and blistered, and curl up, and some of them *collapse;* yet the tree will not be injured externally, so as to destroy the fruit, though many of the leaves will show a light *yellowness*—in fact, a good crop may be taken this year from the tree. The fifth year, the grub, if neglected, still continues to girdle the tree, and in particular places, one half the bark is destroyed; but this appears only to wound, not poison the tree, for in instances where the worm has been destroyed, and the dead bark removed, the trees soon recovered from these *mechanical* injuries. This (fifth) year, the leaves of the tree become *all yellow*, and one half the fruit, of which there will be a great quantity, will ripen prematurely and fall: some few will remain on the tree and become passable. But the tree dies of the *yellows*, not of the grub. It appears to the writer that the disease of the peach-tree is *sui generis*, apd has no connexion with the injury produced by the grub; no other fruit-tree that the writer knows of, dies in the same manner, or at least with the same appearance. With other trees, the injury is mostly, if not altogether, externally obvious: the curled and blistered leaves appear peculiar to the *yellows*, at least among the garden-fruit. Mr. Cox, in his most valuable treatise, though an old one, describes the *yellows* as the malady which destroys much the largest portion of the peach-trees, and that it has hitherto baffled every effort to prevent it.

As far as the writer knows, no tree in the United States, or elsewhere, has become so univer-

sally fruitless and short-lived. The doctrine is no longer believed in England, that all the grafts of particular kinds of fruit have died, so we can not account for the disease of the peach on any similar principle. Our summer and fall pears do well, though the vergaloos, and some other varieties, have for several years failed, yet they appear to be recovering; but of peaches *all* may be said to have failed in this locality.

It must be one of the causes enumerated below, which produced the disease in question.

First. Some sickly tree must have been imported, or some deleterious locality must have produced the disease called yellows, (I know of no better name,) and by its contagious qualities, disseminated itself throughout the country, like the small-pox, and other contagious diseases. Some sensible nursery-men, in the state of New York, would as soon have a case of yellow-fever in their nursery of children, as a tree infected with the yellows in their nursery of trees. To be sure, nothing similar in the vegetable kingdom is known; in fact, the death and corruption of seed, and the decay and rottenness of the tree, are the food of their progeny. But if this doctrine be the true one, we may have some relief in quarantine laws and sanitary regulations as to the transportation of trees. Trees and plants might be smoked, as, in some countries, they smoke letters!

Gentlemen who believe in *contagion*, recommend immediate removal and destruction of the diseased tree. Now this ought not to be objected to—for a new tree can be so easily procured—except that this plan abandons all idea of a remedy. They should, at least, leave some of them to be subjected to experiment. We dismiss the above position, and call upon its advocates for the reasons of their belief.

Second. The next possible cause of this disease, we enumerate the climate, including changes of weather, warmth, rain and drought, frosts, and easterly winds. Many intelligent persons attribute the disease of the peach to one or more of the causes above mentioned. In confirmation of this, might be quoted the European opinion, that frost has at several different periods killed the sycamore, and it is said in the United States, that the American sycamore was killed in 1811 by frost; and well-informed persons think this tree since 1841 has continued to be affected, especially in the state of New York, by frost.

Now I enumerate the following reasons as conclusive, in my mind, against the theory that frost has anything to do with the *yellows*, or the general declension of the peach.

Our climate has not changed, but is the same as it was when the peach produced abundantly. Neither tables, nor tradition, represent any material alteration; to frost we have always been subject. The peach is not a tender tree. The October cling-stone is frequently in fine health, and with fruit on, long after the frost, when all the potatoes, all the melons, peppers, beans, &c., are cut off. The apricot, and nectarine, which come forward and bloom before the peach, grow well in the gardens in our cities, and in the country, when well protected, and give abundance of fruit. Now if frost was the evil, these trees, particularly those protected, coming out first, and liable to the same *frosts* as the peach, should blister up and die with the yellows.

In an account of the spring of 1836 on the Continent, in one of the British magazines, the loss of the crop of grapes, pears, apples, &c., from an untimely frost, is mentioned, but it states that the *peach-trees* never looked finer.

Again, is it reasonable to say that although for a hundred years the peach-tree bore without being affected by frost, yet for the last thirty years there has regularly been a frost each year sufficient to destroy the peach-fruit, and kill the tree? The state of the atmosphere, easterly winds, &c., are all about the same as when the peach-tree was in perfection, no material change is alleged by anybody. We therefore dismiss all these doctrines, and adopt the only rational one in our judgment; that the *yellows* in peach-trees is produced by insects. To prove our position, we shall mainly refer to written authority of the most valuable character.

Mr. Keen, the great English gardener says, that "in 1834, when the blossom-buds of his peach-trees were as large as hemp-seed, a solution of lime, sulphur, and soot, was thrown on his trees, and not a single blistered leaf was to be seen." Now it is believed that the blister of the leaves is an invariable precursor of the *yellows*. The soot and sulphur would not keep off frost.

The American Orchardist, a Boston work, represents the curculio (the grub-worm) as the great enemy of the peach. The author says, "he never saw the *yellows* in New England." Now New England is less subject, from the cold, to insects, and more liable to injury from frost, and yet according to this authority, there is no *yellows* there. New York, and the states adjacent, may have produced insects unknown in New England,—though the writer believes that the *yellows* is in New England, and the insects producing it, too. The statements hereafter, although they tally (and on that account this article has been written) with the experience of the writer, yet the main facts and opinions expressed are from the most modern European and American authorities.

The aphides, or plant-lice, are the enemy which produces the *yellows*, and destroys the peach-tree. This family of insects embraces a great variety. The apple-louse, the cabbage-louse, rose-louse, and willow-louse, of popular designation, for they are best named, for our purpose, by the particular tree or plant selected as their domicil. These different kinds of lice subsist, sometimes on the roots, particularly the cabbage, and among flowers, on the roots of the asters, but on the peach they attack the leaves, bark, and tender twigs. The apple-louse commences at the surface of the ground, attacking the different parts of the tree.

Curtis, in an excellent article in the Journal of the Royal Horticultural Society, remarks, that there is no tribe of insects so universally distributed, or exceeding in multitudes the plant-lice; that probably there is not a plant from the smallest grass, to the most stately tree, that is altogether exempt from this pigmy. Linnæus considered every plant

supported a distinct species of louse, and some plants are attacked by three or four species of lice—they multiply beyond all calculation. From an egg, in one season, 729 millions are supposed to be created. They make their appearance so quickly and in such myriads, as to be termed a blight, and their numerous appearance directly after a thunder-storm, has led to the vulgar supposition that they come from the clouds.

Professor Harris says, "These insects are one of the causes, if not the *only cause*, of the peculiar malady affecting the peach-tree in the early part of summer, called the *blight*," which is no doubt the yellows of New York. Rieamer, a French author, observed the ground quite moist under peach-trees infested with bark-lice, which was caused by the dripping of the sap from the punctures made by the insects. These little insects are most easily examined on the rose-bush. The varieties are very numerous. In the green-house, two or three weeks will produce a generation, and one parent, in one season, will produce several millions. The authority above referred to, states that eggs are laid by the winged-lice in the fall on the trees, and that they hatch in the spring only females without wings, and that *these females*, without the presence of the males, give birth to several generations! (not produced by eggs.) But the male being winged, and the two modes of creation being at variance with nature, the writer thinks the statement in the latter particular, doubtful. The facts, however, show how numerous these insects are, many of which can not be seen with the naked eye. These lice have a proboscis with which they perforate the tender bark and leaves, and suck up the sap, which they exude in great abundance by *two vents*, which exudation is called honey-water, which the ants devour so greedily, that the lice have been called the milch-cows of the ants, who even rub them down, being good farmers, to make them increase the quantity of honey-water.

If the lice only eat enough to support them, it might be said that they did not take enough sap to kill the tree; but they appear to pump it up for the ants, who in different ways, return the obligation. It is not only the quantity of sap they take, but they poison and corrode the remainder, thus stopping up the pores of the bark, and making the tree send out shoots in unusual places, and of an unhealthy character. One who has felt the bite of a louse or a musquito, or has been stung by a hornet, or seen the like or similar insects madden the horse, or considers that a cow, by her milk, will feed a dozen children, but dies in sustaining a quarter of an ounce of lice, will readily suppose a tree would be killed by the parasitical attacks of lice. The eggs of the apple-louse can not be seen but with a microscope, and are to be found in the covering of the bark, in a knob, or cotton-like enclosure, and when full-grown, are but one tenth of an inch in length.

In the 49th article on Entomology, the best of English authority, the Gardeners' Chronicle, we are informed that the little animals stick to the bark of apple-trees, and are similar to mussel-shells. Gamelin calls them *cocus conchiformis*—the scales sometimes lie one over another; they are hard, dark, and shining; they adhere firmly to the bark; they appear woolly. In these scales, a fleshy green female is found, and a part of the shell or scale filled with 40 or 50 eggs. Out of these, proceeds a fat yellow-green maggot.

In an article from the London *Gardeners' Magazine*, another scale is described, of a brown color, pointed at both ends, and *less than half the size of the seed of the common flax*. Sometimes found on the apple itself, the same scale it is said, is prevalent on the peach-trees. It is also alleged by the same authority, that peaches, apricots, and plums, suffer from the attacks of the *mussel-scale*—that these insects migrate from one tree to another—that standard trees are seen covered with the mussel-scales, the trees become hide-bound. They are so minute that you must use a microscope to see them, when in April they first move out.

The apple-trees in England have been most extensively injured for the last 20 years; for nearly the same period, the locust, pears, apples, peach, and quinces, and particularly plums, have greatly failed, and some kinds will not perfect their fruit at all on Long Island. How is this to be accounted for, but by insects? The locust of Long Island was free from borers, and a most valuable timber until 20 years since—now it is worthless.

Forests and new countries have few insects; with cultivation and emigration they, like the birds and quadrupeds, are introduced. The horse now roams wild over the southern forests of this continent. The Norway red-rats have come too, and not content to live here in fellowship with our blue-rats, have killed or driven them from the Atlantic border, toward the Rocky Mountains. Since these things are so, it is not difficult to suppose that as our seeds, plants, and trees, and wrapping-straw, (brought in great quantities from abroad,) have introduced the new vermin and insects of the last 20 years. The tradition is, that the German soldiery of the Revolution, brought the Hessian fly (in the bed-straw) which killed the wheat in New England. But having got the insects, the important point is, how shall we get rid of them? I recommend to begin by quarrelling with their friends. S. S.

(To be Continued.)

HARDINESS OF DURHAM CATTLE.

I HAVE waited until the experiment was fairly tested, to let you know the result of our introducing the Durhams into our "terra nimbosa," and changing their feed from cultivated English pastures, to our trackless prairies and rush-beds. It was generally supposed that our experiment would be a failure, and that the six months winter and prairie hay would thin their ranks. We selected fifty odd individuals from Mr. M. L. Sullivant's, of Columbus, Ohio, extensive and well-improved herd, and drove them on in September; they were chiefly young heifers, and three or four young bulls, descendants of Cornplanter, Talleyrand, Red Jacket, and Niagara.

The winter set in remarkably early, before they had had time enough to recruit from their long

journey. We erected temporary board sheds to protect them from the winds, which are remarkably severe from Saginaw bay; no forest intervening, they come in full force upon us. The winter being so unusually severe, the provender throughout the state failed in March, while the snow was two feet deep. Ours failed with the rest, and we were forced to chop down basswood, elm, and soft maple trees for them to browse on, every now and then giving them a bite of hay, to form their cud. This state of affairs lasted until the last of April, when spring once more showed her smiling phiz. Yet they were in good order, while cattle of the scrub breed were dying all through the country. And this fall they are quite fat, and our calves are beauties.

I find them greatly *superior* on account of the *extra brisket-piece* and larger rounds on the quarters, for the packing business, which is destined to be *the business* of our prairie country. The farmers have become convinced of the superiority of the Durhams for the beef business, and their better adaptation to the rich growth of the prairies, and we trust that in due time they may take the place of the inferior cattle of the country.

Our Leicester sheep do well; the ewes yielding 6 to 7 lbs. of good wool, the wethers 8 to 9 lbs. We hope, by judicious breeding, to improve still farther our cattle and sheep. We have some good Berkshires in the neighborhood, originally from Mr. Bement's farm. D. B. Birney.

Lower Saginaw, Mich., December, 1843.

HEREFORD CATTLE.

Dairy Qualities.—I send you the result of my dairy, but it will not be any criterion to judge of Herefords, although the actual weight is taken from the book of Mrs. Sheldrick, who has kept a correct account of every pound. You were aware of the situation I was in when you visited me last season, that I had no dairy to keep my milk in until the 1st of March, therefore I could not make any butter during the month of February from six cows, three of which calved in January. Notwithstanding this, I send a true statement, although small.

There were nine three-year-olds, two four, and one seven, the month of March. I sold Cherry, a three-year-old heifer, on the 2d of April; from that time until the 1st of October, I milked eleven, at which time I sold my milk to the milkman at $2\frac{1}{2}$ cents per quart.

From March 1st to October 1st, butter	1,456½ lbs.
35 cream cheeses, 3 lbs. each, equal to	105 "
113 quarts of cream sold, equal to	113 "
	1,674½ lbs.

My first cow, Lucy, four years old, calved November 28th, and made last week, 8 lbs. 2 oz. of butter; this is the only cow I am milking, therefore I have every reason to believe the Herefords will do more next season. I am open to inspection at any time, and I will not make any scruple to any respectable judge. I shall be perfectly satisfied if I can make from 6 to 8 lbs. each for nine months, nor shall I want to change the Herefords for any other breed for milking.

I quote from the Mark Lane Express the following remarks from the speech of Fisher Hobbs, Esq., October 23, page 11:—

"He could not, however, conclude without making a few observations as a successful candidate. It had frequently been his good fortune to appear before them in that character, but he never felt so much pleasure from the circumstance as on the present occasion; for it must be admitted on all hands, that, except in a few instances, the competition was very good indeed, and in some cases very severe struggles. He was the more happy as a great victory had that day been gained for a breed of cattle for which he was a strong advocate. He did not think, as judges were generally prejudiced in favor of Short-Horns, that Herefords could have been so successful as they had that day been. When he first became a farmer he was determined to have a good breed of cattle. He first tried Short-Horns, because he thought they were the best! and at a sale in Suffolk he purchased several, better than which could not be obtained. He also purchased some Herefords and kept them together for twelve months, and the result was most decidedly in favor of the latter. He was therefore compelled, contrary to *his own wishes*, to give up the Short-Horns and take to Herefords, and he had from that time continued to do so, being satisfied that with his soil and climate they paid the best. [Hear, hear.] He trusted the farmers whom he was addressing would do as he had done, and judge for themselves what description of stock was best suited to their farms; and when they were satisfied that they had a breed which would prove most profitable to them, he would advise them to keep them, and if they came here to exhibit them, and were occasionally unsuccessful, he would urge them to go home with a determination of meeting with more success on another occasion. [Cheers.]"

Mr. Hobbs gained the first premium as the best cow in *milk* of any breed with a Hereford. What will Youatt and his followers say to this? let us *hear* from them. Again I refer you to a sale of Herefords, page 12, October 30, the property of Mr. John Hewer.

"An in calf, cow Lady, by Chance, was knocked down for 100 guineas, ($500.) Two-year-old Victoria, 87 guineas, ($435.) Yearling heifer, 40 guineas, (or $200.) An aged bull, Dangerous, (the sire of some of my heifers,) 100 guineas. Lofty's bull calf, 51 guineas, and several others at similar prices."

What does this say for Herefords? *Does it not prove that some writers know nothing about them*, and will it not teach some of them to *search for facts* before they *abuse* the Herefords? I refer you to a sale of an excellent herd of Short-Horns, the property of Mr. Rogerson of Algarkirk, page 12, October 23. You can make your own statement. (*a*) It is by such comparisons that we arrive at *truth*. I do not think that breeders in this country are willing to pay a remunerating price for a good animal; the butchers have far more spirit, and my object in future shall be to serve

them. If they want this stock let them go to England and fetch them, they will then know their true value; at present I intend to make steers of all. Nor do I intend to show another animal in this country for a premium as long as a combined prejudice exists.

WILLIAM H. SOTHAM.

Hereford Hall, near Albany,
December 6th, 1843.

(*a*) As our Mark Lane Express is not at hand, we can not quote the prices of the Short-Horns to which our correspondent refers. We can say, so far as our acquaintance extends, that there is every disposition to do the Herefords even more than justice; and we hope that Mr. Sotham will not regard the expressions of a few, as the opinions of the public in general. We know that several of the Short-Horn and Devon breeders much regretted that Mr. Sotham did not exhibit his stock at the State Show at Rochester last year, and they will be more disappointed, as well as the great body of the farmers, if he do not appear in strong force next September. We hope the Society will have the fairness the present year to class the different breeds by themselves, and not put Herefords, Devons, and Short-Horns, as heretofore, against each other. They might with as much propriety arrange Cotswold, Merino, and South Down sheep in one class.

THE WHEAT OF TAOS.

ALLOW me, through the medium of your journal, to direct the attention of agriculturists to a very peculiar kind of wheat to be found only in New Mexico, at least so far as I have been able to ascertain. I allude to the wheat of Taos, which is a small hamlet situated in a deep, narrow valley, between lofty ranges of mountains 60 miles north of Santa Fé.

The peculiarity of this wheat consists in the plurality of heads or ears, differing from our common wheat heads only in size, being a trifle shorter, and thicker, but equally well filled out. The berry is quite as large, the flour as white and good as the wheat cultivated in this country. The stalk also is stronger and thicker, and but a very few inches shorter. About eight inches below the top and immediately above a joint, a small seed-stalk is sent out two or three inches long, terminating in a head or ear. At a proportional distance, say 1½ inches above the first seed-stalk, another is sent out in the same manner as the first, and so on continuously for six heads; the main stalk or straw terminating also in a head like the common variety. It produces in all seven heads or ears of the same size and character. By the Mexicans it is generally distinguished from the other wheat as *El trigo de siete espigas*, (seven-headed wheat.)

The stalks on a field of this wheat, appear to a casual observer, to be nearly as thick as other wheat; but as this condition, with its multiplied heads, would have produced something like five times the quantity of an ordinary wheat-crop, it is probable that it stands much more scattering. I am satisfied, however, it produces much larger crops than other wheat, and that it is well worthy a trial by our American farmers.

I procured about a pint of the seed, which I took with me on my route to California, but which I subsequently lost on my perilous journey, or perhaps it was consumed amid the extremity and privations to which we were subjected.

Mr. George Gold, a raiser and distiller of wheat at Taos, above, is the first person who directed my attention to it. From him, the seed can probably be procured, through Mr. John Scully of Santa Fé, who is well acquainted with Mr. Gold.

J. H. LYMAN.

BUTTER-MAKING IN ORANGE COUNTY.

I HAVE delayed until now a compliance with your request, to furnish to you a statement of the progress of butter-making, as pursued in our county, with a view to obtain from a number of our best butter-makers, the details of their process. As the statements received do not materially differ from each other, or from my own mode of proceeding, I shall give you that.

THE MILK-ROOM.—It is all-important that this should be *cool, dry, and moderately light*, with a *free circulation of air*. Mine is in the cellar of my farm-house, ventilated by means of two windows about two feet square on the north side, and a like window, and a lattice-door on the south side, all covered on the outside, with wire-gauze, fine enough to exclude the flies. The floor is formed by a layer of small stones, six inches deep, well *grouted*, (that is, a mortar of lime and sand, thin enough to run freely, is poured upon the stones until they are entirely covered with it,) and when dry, a thin covering of water-lime cement is put upon it, and made smooth with the trowel. This costs little, if any more than a plank floor, and effectually keeps out both rats and mice; and as water does not injure it, it is easily kept perfectly clean and sweet. The milk-pans stand upon marble slabs, raised upon brick-work, about two feet from the floor, and the butter is worked upon a marble table. A pump is placed at one end of the room, bringing the water through a lead-pipe from the bottom of the well, and the water discharged, runs the whole length of the cellar in a channel prepared for the purpose, when the floor was cemented, and escapes through a fine iron grate, cemented into the floor, over the mouth of the drain. The churn stands in the milk-room, and is worked by a dog-power machine, on the outside of the building. The milk-room should be used exclusively for dairy purposes.

DAIRY UTENSILS.—The cows are milked into wooden pails, not painted on the inside, and kept perfectly neat and sweet. They must be thoroughly cleansed, dried, and aired, morning and evening; and never be used for any other purpose. The pans should be shallow, with sides much more slanting than the usual pattern of pans which we

see at the tin-shops, and be kept as bright as silver; they also must be well aired in the sun.

The Milk.—This must stand in the pans, *undisturbed*, until the whole of the cream has risen: (some of our best dairy-women say until it is "*loppered*," or thick.) both milk and cream are then put into the churn together, at a temperature of about fifty-five of Fahrenheit; the churn is then worked with a rapid stroke, say from 60 to 75 per minute until the butter "begins to come," when the brake is put upon the wheel, and the churn is worked more and more moderately until the butter is entirely separated from the butter-milk. Upon taking the butter from the churn, it is washed with cold water, salted, and thoroughly worked with a *wooden ladle*, upon the marble-table. It must never be worked with the hand, as the warmth of the hand will injure it. It is then set aside in a cool place, until the next day, when it is again, in like manner, worked until every drop of the butter-milk is extracted. It is then fit for packing away, or for use. The butter must at no time be allowed to get soft. Fredk. J. Betts.

Newburg, Dec. 12th, 1843.

GRAVEL IN ANIMALS.

It is now more than one year since I discovered something wrong with my bull Yorkshireman, and having lost a fine ox some years ago with gravel, I was not long ignorant of what was the matter. I accordingly applied to a regular physician, who directed 1 oz. of juniper berries, ¼ oz. of box leaves, and ¼ oz. of pearlash, to one gallon of water. After using four portions of that prescription in one week, I gave him several bottles of harlem oil, together with about two gallons of honey; after which I gave him 1 oz. of pearlash daily for a considerable length of time. For several days after I commenced doctoring he was extremely bad, frequently clambering with both fore feet into his manger, then moving swiftly from one side of the stable to the other, and switching his tail furiously at the same time, appearing to use every effort to water, but frequently to no effect. Having caught his water frequently, I discovered a piece of gravel near twice the size of a grain of wheat; it appeared to have been broken off from a larger piece. By degrees he gradually got better, and I have seen but little symptoms of the complaint until a short time ago, when I again commenced using pearlash. I have been thus particular in giving this account, in hopes if any one should have a case of the kind, they may, if they think proper, try the same course of doctoring. It is said the gravel is not always produced from the same cause, but medical men are enabled to judge of the cause by the color of the gravel.

Last spring I lost a yearling buck lamb. It was noticed for a few days to droop about, when one of my boys who had the care of them concluded that it had the gravel; but as I had never heard of an instance of the kind in sheep, I did not suspect that it was gravel. I gave it a dose of some simple medicine, when it immediately died. I examined it carefully, and as soon as I opened it discovered the neck of the bladder was burst open, and a large portion of bloody water among the intestines; but it was not until I had opened the penis with a sharp-pointed knife to the extreme end that I found the cause, which was a piece of gravel about the size of a grain of wheat. In the ox that I lost, I found two pieces of gravel in the penis wedged in alongside of each other, more than half way along it. They were as large as small-sized grains of coffee, and about the shape. Had I known previously how these two were circumstanced, I might in all probability have saved them both. I think by having a record of all such circumstances to refer to when cases of the kind occur, there would be a great advantage in it.

Joseph Cope.

Kirkleavington, Pa., 20th of 1st mo., 1844.

BUCKTHORN HEDGES.

Rhamnus catharticus.—This beautiful shrub was first used in this country for growing live hedges, by Mr. E. Hersy Derby, of Salem, Massachusetts. He first commenced propagating it by cuttings in 1806, from an individual tree which stood in the venerable Dr. Holyoke's garden in that town. Since that period up to the present time, he has constantly multiplied the species by cuttings and seeds, and independently of ornamenting his own grounds, he has sent plants and scions to nearly every state in the Union. He has at present for sale at his nursery, several thousand vigorous plants at $3 per hundred, with a reasonable discount where large quantities are purchased.

This shrub flourishes best in rather a moist soil, although it will thrive in any soil that is adapted to the culture of garden vegetables. It is exceedingly valuable for live hedges, on account of its being able to resist any degree of climate in the United States, and of sure growth whenever transplanted. It remains green many weeks later than the English hawthorn, and in the vicinity of Boston, retains its foliage long after the fall of snow. In consequence of its medicinal properties, it is not attacked by any insects, nor devoured by any of our domestic animals.

The following cut will show a pleasing mode of growing a hedge in front of a dwelling, or enclosing ornamental grounds. As the plants will grow to the height of twelve or fifteen feet, they may be trained over an arch or trellis, and form a beautiful, densely-shaded arbor or walk.

Buckthorn Hedge.—(Fig. 6.)

It is preferable to set out the hedges in trenches from three to six inches deep and eighteen inches broad. The plants may be arranged in two rows ten or twelve inches asunder, and set six or eight inches apart, placing those of the second row opposite the centre space of the first, thus:—

When the hedges have acquired a proper height, they should be kept well trimmed, and if desirable, they may be cut into fanciful figures, which the English call *topiary* work.

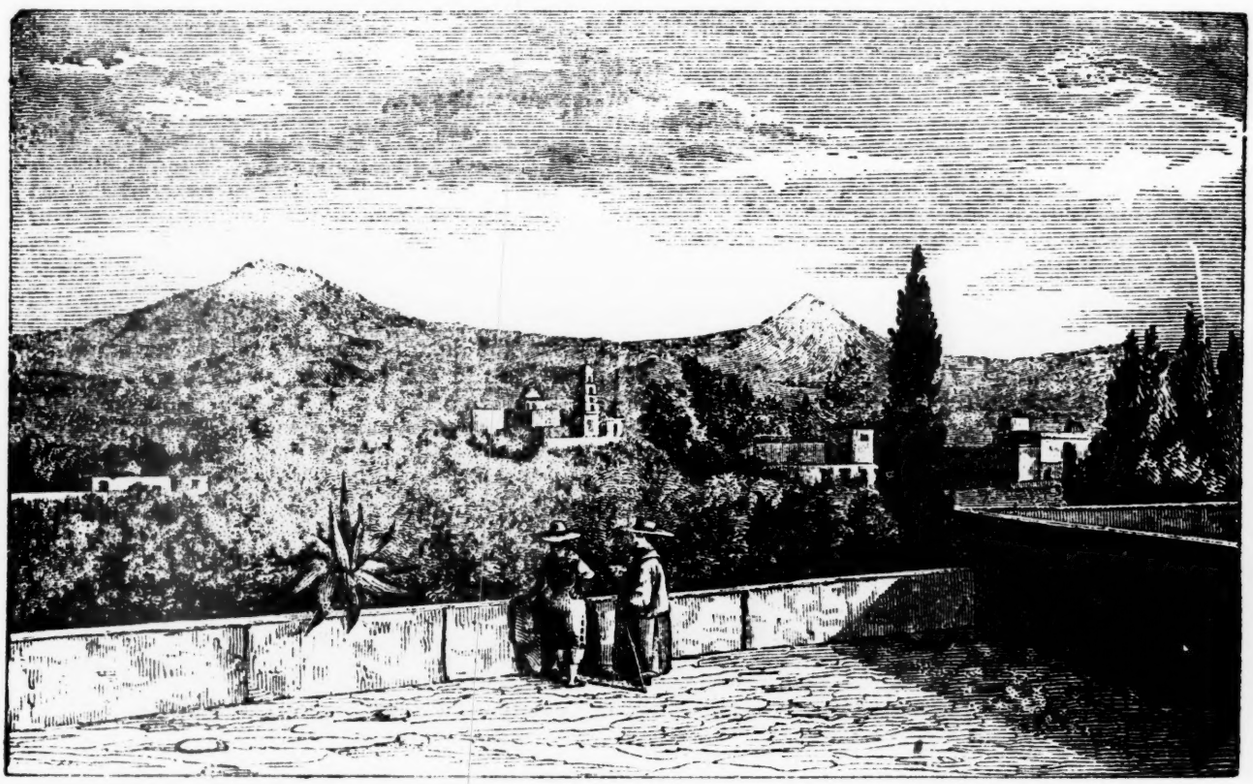
The plants for one rod of hedge set in two rows, and six inches apart, will cost about $1, when bought at $3 per hundred, and will last half a century and upward. B.

A MEXICAN FARM.

As we were disappointed in getting some cuts finished in time for this No., we are obligingly furnished by Mr. Winchester, the publisher of Mexico As It Was and As It Is, with a sketch of a farm and volcanoes in the distance, in this surprisingly rich agricultural country. The vicinity and part of the ascent to the volcanoes is thus described:—

The southern slope of Popocatepetl appeared to offer our travellers the easiest ascent, and, accordingly, having obtained three Indian guides from the Alcaldé, and an escort of two soldiers, for the wilds of the forest, they set forth on their perilous journey early on the morning of the 22d of May. Their way led through a tangled wilderness of plants and trees. After passing a number of barrancas, the sides of which were covered with

THE VOLCANOES FROM TUCUBAYA, AND A MEXICAN FARM.—(FIG. 8.)



beautiful pines standing out in relief against the bright snows above them; and being compelled to cut a way through the matted forest with their swords and Indian axes, they reached, about noon, the rancho of Zacapalco. The owner was absent from home, but they found the extensive pasturages round his house filled with cattle, and protected by a guard from the wolves and lions with which the woods are infested. As there was no one in the dwelling to make them welcome, they took the liberty to help themselves to the grazier's utensils, and dined most comfortably at the upland farm. The air was chilly, and respiration had already become difficult.

After their meal they bade farewell to part of their company, and with the Indians and two servants, continued their upward course on horseback, notwithstanding the increasing heaviness of the sand. In two hours they attained the limit of vegetation, when they saw but a few pines, whose gnarled and twisted branches exhibited scarcely a sign of verdure. At this spot our travellers found a wide desert of black volcanic sand, covered with fragments of pumice. The volcano lies about 60 miles from the city of Mexico, and after Chimborazo, is the highest peak on this continent.

Some small singing-birds flew by them, and the plants they had observed in the course of their ascent thus far were the salvia, baccharis, acacia, cestrum, asclepias, iresine, arbutus, eupatorium, hedyotis, viburnum, corœpsis, myosotis grandiflora, myosotis flor. alb., stachys, lobelia, stevia, leonia-salvifolia, œnotera, fuchsia, and achyrophorus roseus. Those nearest the limit of vegetation were the chelone gentianoides, amaryllis minuta, phœlia, castilleja, lupinus-vaginatus, ribes odoratum, and arenaria bryoides.

THE BEST SHEEP COUNTRY.

In reply to the inquiry of *Americus*, in your April number, of "Where is the best Sheep Country?" I will answer, by giving as correct a description of the southern portion of Mississippi, with my limited notions of sheep, as I can.

This state borders on the gulf of Mexico about 90 miles, a sandy pine-wood country. The coast is indented with numerous bays and tide-water bayous, which carry the salt water far into the interior, in every direction useful for stock, and convenient for navigation. From the gulf coast for 2 to 6 or 8 miles, the country is generally quite level; lying, as it were, in waves of dry, sandy ridges, and slow-running branches, parallel with the seashore; these dry ridges occupy about two thirds or three fourths of the surface. On this kind of land I have had a small flock of 60 head of sheep for about a year, and they have done well, without any appearance of disease of any kind. After leaving this level tract of country, the land becomes rolling and hilly, and continues so for an average of 100 miles north, with an equal, or greater width, from east to west, extending into Alabama and Louisiana. This whole tract of country is covered with the long-leaf pitch pine; near the seashore mixed with live-oak, magnolia, holly, sweet, red, and white bay, cedar, water oak, wild peach, myrtle, and a great variety of small shrubs, all of which are evergreens; and all the above tract of country is well covered with a great variety of our evergreen timber and shrubs. The whole of this tract is filled with the purest free-stone water, with an immense water-power on the numerous living streams, fed by innumerable springs. This whole section of country has long been celebrated for its great capacity to sustain immense herds of cattle, winter and summer, on its native grass, which covers the whole face of the country, and *reed-brakes* about springs and branches, but the "goose has been killed for her golden egg." Their stocks were increased beyond the capacity of the country thus to sustain; the reed-brakes are mostly destroyed, or so seriously injured that the business of marking, branding, and selling cattle, does not now make men rich as heretofore, and many of these stock-raisers are giving more attention to the cultivation of the soil. This destruction of the native range for cattle, is a necessary preparation of the country for grazing sheep and goats. Instead of the reed which subsisted the cattle in the winter, sheep and goats prefer browsing on the evergreen twigs, briers, and a thick woolly-leaved plant that covers the whole country. Besides, our native grass shoots up young spears all winter, under the dead grass, near the ground, which sheep will gather and subsist on, when cows would starve. Neither sheep nor any other kind of stock require salting within 25 or 30 miles of the seashore. Our whole winter of cold, bad weather, all crowded together, on an average, would not equal the average of your month of November alone. Our first killing frost generally comes between the 20th and last of November, and our last from 1st to 10th February, crowding what little winter weather we have into the short space of between two and three months, and often less than two.

I believe there is now no doubt that as fine wool can be grown in this latitude as any other; neither is there any doubt about the capacity of this country to raise grass for grazing, perhaps equal to most sections of the United States, particularly the Bermuda, so well adapted to sheep. Any quantity of turneps, carrots, ruta-baga, &c., for fatting sheep in winter, can be grown here, on lands manured by penning sheep on them the previous year; but so far, we find our mutton and lambs very fine, killed directly out of the woods.

Perhaps nine tenths of the whole tract of country is what may be called a dry, rolling, and hilly upland; no mud, and with fresh, pure water everywhere convenient. If, then, these advantages of situation, water, and climate, with abundance of food, constitute this "the best sheep country within the limits of the United States," I will endeavor to prove that it would be a more desirable and profitable business here, than any place north of this.

1. There is no part of our Union which will compare with this in point of health, all the year round; this I consider so perfectly a settled question with all who have taken the pains to examine it, that it will neither be doubted nor denied. 2. Our mildness of climate, alike free from the extremes of both the heat and cold of northern summers and winters. Our delightful seabreezes, tempering the effects of a southern sun; free from mud in winter, and dust in summer; and all our annoying insects put together are not so bad as the house flies of the north, which we are almost entirely free from here. 3. Our convenience to New Orleans and Mobile, two of the best markets in the world for lamb and mutton, from which we can get advices of the market every day, and being always on the alert, be in market the next, with whatever we have to sell; besides the convenience and facility of shipping wool to any point where we can find the best market, and last, though not most unimportant, the great water-power throughout this whole country; mildness of climate, cheapness of living, and comfort while we do live, and unsurpassed health of our whole coast, all conspire to warrant the belief, that manufactories of cotton and woollen goods will soon be started in this region of country, sufficient to consume all the wool that can be raised. A home market always being the best, will add another strong argument in favor of growing sheep and wool in this section of country. The capacity of the country on and near the seashore to raise sea-island cotton to advantage, and that of the country further back to produce the Mexican cotton to any desired extent, would thus supply all the raw material, without expense of transportation, and at the same time open a market for the manufactured article of the same desirable kind.

I may at some other time of more leisure, give you my opinions of the great advantages I consider the country possesses for tanning; manufacture of shoes, boots, saddles, and harness, hats, glass, silk, tar, turpentine, rosin, &c.

However much I may be mistaken about the advantages and capabilities of this country, my opinions have not been hastily formed, nor with-

out a tolerable share of practical observation, embracing a pretty wide tract of country from a little north of Boston to a short distance within the tropics; and after all I have seen, and some I have tried, I am perfectly satisfied that *here* a man can enjoy more of those great objects of rational pursuit in life, *health* and *contentment*, than at any other place I have known. Our country is sufficiently productive, and resources sufficiently numerous, to gratify all our rational wants with only that degree of labor which is essential to our mental and physical comfort, and too poor to excite those feelings of avarice that derange so often the mental, moral, and physical harmony of our organization. While we are removed on one side from that lassitude, ennui, and muscular relaxation, of a tropical climate, we are equally protected on the other from the severity of the northern winters, the cause of much severe pain, besides the mortality produced in colds, consumptions, rheumatisms, &c., equal, perhaps, to the bilious fevers of the *malarious districts* of our southern climate.

But I have digressed—I intended only to give you my opinion of this, as a sheep-growing country.

JOHN J. MCCAUGHAN.

Palmetto Farm, Mississippi City, December 1st, 1843.

BUTTER FROM SOUR MILK.

As many of the farmers in Orange county, and elsewhere, are in the habit of churning their milk sweet, and fresh drawn from the cow, as our correspondent thinks is the best method, we should be glad if they could inform us whether butter thus made, keeps longer than that made from the cream of the loppered or soured milk. Previous to our late visit to Orange, we supposed that it did; but we were informed there, by many with whom we conversed, that such was not the fact, at least, so far as our northern climate was concerned. Whether the rule holds good for the tropical climate, we did not inquire. We presume there are those in Orange county, who have shipped butter to the West Indies, and can give us full information on this point.

New York, Jan. 4th, 1844.

IN a late number of your paper, in the account of your visit to the Orange county dairies, you remark that the milk is suffered to stand upon the cellar-bottom until it becomes loppered, or sour, and that the people have an idea that it makes more butter in that state, than in any other, and of a better quality. This statement is believed to be incorrect, as far as the *quality* of the butter is concerned, and it is doubtful whether there would be more in *quantity*, if the whey or butter-milk were properly extracted. It is a well-known fact, that in many parts of Europe, as well as several instances in our own country, there are farmers who have not cows in sufficient numbers to churn every day themselves, but unite with their neighbors, and churn their milk together, in order to preserve a good quality in their butter. This will at once be obvious in examining the nature and decomposition of milk. When it is new and fresh, the butter or oleaginous part separates more perfectly from the whey or butter-milk, than it does when old and sour; and even it is possible for a chemical union to take place between the parts, when sour, that would be difficult to separate by the process of churning.

Milk becomes sour, in consequence of the fermentation of the whey which it contains; and the cause of butter being rancid, is the fermentation of the whey that remains incorporated within it. If butter be made from new milk, and the whey be totally extracted therefrom, it will remain fresh for several months without salting; yet, if made from sour milk, howmuchsoever it may be salted, and carried into a tropical climate, it will become rancid in a few weeks, unless kept cool by ice or some other means. Butter made from new milk will more perfectly imbibe salt, in like manner as fresh, untainted meat; but when made from sour milk, it will not readily combine with salt, neither will putrid meat receive salt at all. B.

EXPERIMENTS WITH MUCK.

As you considered my lucubrations on marl of sufficient importance to publish in your December number, I now forward you an account of a little experiment with swamp mud, or what, I reckon, you call muck at the north.

I had a few acres of swamp on the corner of my plantation, which, in particular seasons, I have no doubt has been the cause of some sickness among a part of my negroes who had their quarters there. I accordingly determined, two years ago this month, on draining it. This I easily effected in a few days, by digging a ditch through the centre four feet deep and five feet wide. As I had read much of the virtue of swamp-muck with you at the north, I thought I would try it on cotton in a different field, though nearly of the same quality of soil as that on which I spread the marl. I put on about the same quantity and in the same way as I did marl, but for some reason it did not produce as good an effect as the marl, though I anticipated a better one. Another little experiment I made with the muck was more successful. I had a barrel of lime left over from a small job done by my masons, and this I mixed with two wagon-loads of muck, and laid it up in a heap for three months. This compost I applied in March to my garden, and it had a wonderful effect on the growth of the vegetables during the whole season—better I think even than the usual quantity of stable-manure I am in the habit of using. Now did the lime make the difference? (*a*) If it did, I shall almost regret it, as lime is too costly as I am situated to use as a manure for my land.

C. Mc. D.

Sumpter District, S. C., Dec. 12th, 1843.

(*a*) The difference must undoubtedly be attributed to the lime, in consequence of its destroying the acidity of the muck, and hastening the decom-

position of the vegetable matter in it. That which was applied to the cotton-field without admixture with lime, will require more time to display its good effects. We presume these will be fully apparent another year, although if lime could have been added, it would unquestionably have increased its value. Will our correspondent note the difference between the crops on the muck and marled fields another year without adding any more to them this season, and give us the result? We presume ere this that C. McD. is in possession of the last number of our second Volume, where he will find a capital article, page 367, on the value of muck as manure.

AGRICULTURAL COLLEGES.

The 19th century presents the singular anomaly, of an age, skilful to a degree beyond any that has preceded it, in all the arts that minister to the comforts and luxuries of man, with the single exception of that art, which is alone the base and support of all others—the art of an enlightened agriculture. All the elegancies of life too, and the refinements of intellectual culture, the useful and recondite sciences, literature, poetry, music, painting, and sculpture, have been patronised, illustrated, and studied, under every advantage, and have thus been pushed far toward their maximum of improvement; yet is the foundation of this varied and beautiful superstructure, the only portion of the edifice which is destitute of strength, order, symmetry, or design. And if we look back through the history of the ancients, reaching, according to the most approved chronology, much farther than 6.000 years, we find no record from which we can learn that any branch of the world's ancestry has been wiser, in this respect, than their descendants of the present day.

We shall not attempt to account for this gross and most inexcusable neglect, beyond the effect of that principle, which may almost be taken as an axiom in human conduct, that man's exertions are withheld, just in the ratio of the Deity's munificence. Supreme Benevolence has wisely provided for the success of the humblest efforts of unenlightened reason, in its struggles to procure from the earth the elements of subsistence; and on the very threshold of this success, have all human efforts been arrested. Content with having achieved the bare means of existence, the human mind has been stayed in this vast field of inquiry; and has turned away from it, if not with loathing, at least with indifference, and with a keen and delighted relish to other and less important and less praiseworthy objects of ambition. Whence comes this lack of reason, this short-sightedness to our own best interests? We must acknowledge ourselves incompetent to give the answer, and we gladly assign the solution of this difficult problem to our modern philosophers, who are so worthily busying themselves with "the law of progress;" from whom alone must light come, if it come at all.

Whatever the cause may be, certain it is, that the world has hitherto taken but the initiatory steps in the art of agriculture; and this broad land, like the western hemisphere in the days of Columbus, remains a terra incognita, an unexplored continent, inviting the most intelligent research, and ready to repay its explorers, with the highest rewards. It may be true, indeed, that portions of this goodly land have been heretofore discovered by the Northmen of preceding times; and even inhabited by a refined race of Aztelans possessing a high degree of culture; yet to the present race of man, no chart or history has been bequeathed, to point out its location or well-defined boundaries. Whatever discoveries may have been made in this great art in the early ages of the world, by the Egyptians, or other early civilized nations, who possibly, may have inherited from the antediluvians, a science and practice far beyond any thus far reached by successive generations—it is certain, that modern inquirers must re-discover it for themselves, if they wish now to have it in possession.

We would not be ungrateful for the worthy and efficient service, rendered, since the commencement of the present century, by the devoted sons of genius, who have given a portion of their time to the elucidation of the principles of agriculture, and who have begun a systematic investigation of the laws of nature, that needs only to be followed up, rigidly and unremittingly, to result in all the benefits which may be fairly demanded at their hands. But, we ask, what has been the success in this all-important pursuit, that will compare with the improvements in the mechanic arts, as shown in the application of steam, machinery for the manufacture of the different fabrics from wool, cotton, silk, the metals; and the various other new and important aids rendered to the useful occupations of the present day? With the facilities afforded by the above inventions, one person can now do as much, as could have been accomplished by twenty, without them, only 40 years ago. Can any approximation to such improvement be shown in the cultivation of the soil? We speak not of the mechanical instruments of the farm, which have measurably, and perhaps to the extent which could reasonably have been expected, participated in the modern progress of improvement.

Our meaning is much broader and deeper, and includes the whole science of agriculture, in all its varied phases and relations. We look to, and demand for agriculture, that enlarged and liberal measure of discovery, which will enable the human race to provide sustenance for its thousand millions of inhabitants, now covering the face of the earth, destined, probably, hereafter, to be indefinitely augmented; with an approximation to that certainty and success, that attends human labor in the other departments of life. We prepare our land and sow it to wheat, or plant it in corn; and after much doubt and uncertainty, reap from the first an average, in these United States, probably, not exceeding 14 bushels; and gather from the last, not more than 20 bushels per acre. Yet we have seen under favorable circumstances, that the former has yielded 80 bushels, and the latter over 180 bushels per acre. We claim, that abating

somewhat for the accidents of seasons, unusual droughts, humidity, or frosts; or perchance, the destruction following upon the eccentricities of the elements, as a hail-storm, or whirlwind, on an ungarnered crop, we might look for the highest results from every well-directed effort, with the same confidence that we now look to the attainment of any given speed from a steamboat, after providing it with a suitable model, engine, and fuel; or the weaving a definite number of yards by a power-loom, properly constructed, and moved by the requisite force. To accomplish thus much, we have but to place our soil, and seed, and culture, in the same precise conditions, that have once been so successful; and yet how seldom is this achieved, even on the same field, and under the same direction as may have been before employed.

If we look beyond the discoveries hitherto applied, and bring to the science of agriculture such analogies as are appropriate to the subject, as shown from the progress of human invention in other departments of enterprise, we may reasonably expect developments in aid of this object, which would now be considered as perfectly Utopian. What brilliant results may yet crown the researches of the devotee of agricultural science, and what green and enduring wreaths of glory are destined to circle the brow of genius, who may hereafter successfully explore this hitherto almost untrodden waste. And how the comforts of this world, and its means of subsistence will be multiplied, when all the aids to its cultivation are rendered, which mankind have a right to demand.

We have then our deficiencies for the present and past, and our hopes for the future pointed out. Where are the remedies for the former, and the proper and reliable foundations for the latter? First and mainly, it may be answered, in bringing the right minds to the just and full consideration of this subject; and secondly, and as a necessary sequence to the former, the application of the requisite amount of funds, which shall secure genius of the highest caste, under all the circumstances of advantage, essential to its fullest effect.

Briefly, and in a form that all may comprehend, we say; we want an agricultural institution, founded and arranged on the best principles which can be dictated by enlightened experience, sound judgment, and a shrewd common sense; and so guarded, as to be unassailable by the corruptions of party, and beyond the reach of any hostile innovations of the fickle multitude; *and such an institution should be endowed with a permanent fund of one third, to half a million of dollars.* In this institution, we would place a chemist and geologist; an anatomist and physiologist; a botanist; an entomologist; and a practical agriculturist, who should give embodiment and effect to the suggestions of science, and run each out to a clear, distinct and definite result. These professors should be such as the choicest spirits of the age could afford; surrounded with all necessary assistants, books, and apparatus, and a well-conducted, and sufficiently-extended farm; and their services should be secured by a compensation perfectly adequate to their entire independence for life. Under these circumstances, we should have a series of experiments following each other in well-arranged and appropriate succession; the results of one, constituting the starting-point for another, and each department would be aided in its researches, by all the light afforded to it by the others.

With such an institution, how long would it be, ere the tyro in agriculture could go to it, with the same certainty of receiving the requisite information, that the mariner now does in consulting his chart and compass? The slow and dangerous coasting, amid shoals and breakers, that now mark out his benighted course, would at once give way to bolder movements, and more direct and certain success. Thus guarded, thus endowed, and thus filled, such an institution would revolutionize the practice of agriculture within the present age, and more than double the products of the earth, with the same labor and expense now devoted to them. Is this not an object worthy the legislation of statesmen, or the munificence of intelligent and patriotic individuals?

But with legislatures constituted as at the present day, we can not, probably, look to a single one of our 26 state governments, for the object desired; and as for Congress, nothing can be hoped from that quarter. From $10,000,000 to $12,000,000 is the amount of our annual *peace* appropriation for war; and this preparation for human butchery, is all legitimate and proper; but an appropriation of one twentieth of this amount, to feed the hungry, and clothe the naked, and carry comfort and consolation to the diseased and destitute, the aged and infirm, and afford thrift and abundance to all, would, in the opinion of our strict constructionists, rend our constitution to tatters. Verily the extremes of human wisdom and folly, like the continued extension of the arch of a circle, finally meet in the same point.

Hopeless then, as may be the realization of the desired aid from any present legislation, we have to expect it, if at all, from individual bounty alone. Here indeed, is a glorious field for immortality, for one sufficiently enlightened to grasp it, and the man who shall have the good sense and liberality, to found the first Agricultural College on the enlarged and munificent plan proposed, will secure a fame for all coming time, before whose brightness that of an Alexander or Napoleon would become dim, or distinguishable only by its intensity of darkness.

We must confess our hopes in the beneficial results of the present efforts in the cause of agriculture—our inquiries and discussions—our treatises and periodicals—our agricultural premiums and shows—come up to this extent, and scarcely more: they are awakening the public mind to a sense of its deficiencies; they are discovering the vacuum which yet remains to be filled. They are the crepuscular light which heralds the coming morn, but they are not the glorious effulgence of the king of day. But his approach is indicated beyond the possibility of doubt; and ere long the world will be in the full enjoyment of his benignant rays. They are not the Light so long looked for, and so much desired, but they are "the witnesses of that light."

We shall soon have, not only one, but a multi-

tude of agricultural colleges, and when they have had time fully to mature their fruits, a certain and overwhelming abundance will crown the efforts of every enlightened agriculturist. But we must have them, unassociated with other departments of human investigation and acquirement, where they would be exposed to a foster-mother's kindness. They must be planted, in all the vigor of manhood, on an immoveable basis, where agriculture, and nothing but agriculture, shall be the theme and sole object of pursuit, to both professor and student. And well might they content themselves with the study of this single science, that embraces within its comprehensive grasp, (however disdainfully it may heretofore have been considered, by flippant scholars and shallow philosophers,) almost the entire range of the natural sciences, embodying as they do, the most abstruse, as well as the most beautiful investigations of the human intellect.

R. L. ALLEN.

New York, Jan. 6, 1844.

THE CRANBERRY.

THIS delicious fruit is coming into such general use, and is becoming so important an article of export, and so much interest is now taken in its cultivation, that I propose giving a concise account of the same, and its general history.

The common American cranberry (*oxycoccus macrocarpus*) is found growing in a wild state in swampy soils, in the eastern, middle, and western states. The first account we have of the cultivation of this fruit, is by the late Sir Joseph Banks, who in 1813, produced from a bed 18 feet square. 3½ Winchester bushels; being at the rate of 460 bushels to the acre. Capt. Henry Hall of Barnstable, Mass., has cultivated this fruit for the last twenty years. His method is to spread on his swampy ground a quantity of sand—this is to kill the grass; but where sand is not at hand, gravel will answer the same purpose. He then digs holes four feet apart each way, and puts in the holes sods of cranberry-plants about one foot square.

As this plant naturally grows in a very wet soil, it is generally supposed it will not thrive in a dry soil; but this idea is erroneous. Mr. Suilivan Bates of Billington, Mass., has cultivated the cranberry on a dry soil for several years with the utmost success--having produced 300 bushels to the acre on several acres, and his fruit double the usual size. His method is to plow the land—spread on a quantity of swamp-muck, and after harrowing the soil thoroughly, set out the plants in drills twenty inches apart,—hoeing them the first season. After this no cultivation is needed. By both the above methods the plants will cover the ground in three years.

From my own knowledge of the cranberry for the last thirty years, should I design commencing the cultivation of this fruit on an extensive scale, I would try it on both swampy and dry soils. I would drain the swampy soil, plow it as early as possible in the spring, and set out the plants on the plan of Mr. Bates.

To show the rapidity with which cranberry-plants increase, I will add this statement from an English work on fruits. An English gentleman had only a few plants, these he cut in small pieces or cuttings, and set them out in a green-house. In the spring he prepared some swampy ground by spading it 12 inches deep. In a bed 150 feet long, and 4 feet wide, he set out seventy-five cuttings in one drill through the length of the bed, putting the cuttings two feet apart in the drill, and yet in three years the plants completely covered the ground.

In Massachusetts the cranberry-crop is once in a few years cut off by the late spring frosts. This may be prevented where a meadow is so situated as to be flowed. The water should not be over one or two inches deep on the cranberries, nor be left on later than the last of May in this climate. If kept on till it becomes warm, it will kill the vines. Perhaps the best management would be something as they flood rice-fields at the south, or water meadows in England—let the water on while the weather is coldest, and then take it off as it moderates. Sometimes, in the eastern states, the cranberries are destroyed by a frost in September; where water is convenient and plenty, the meadow could be flowed on cold nights at this season, as well as in the spring.

Previous to shipping cranberries, they should be run over a platform slightly inclined. The rotten and bruised fruit will not run off, but stick going down the platform, and are scraped off and thrown away. The perfect fruit is then put into tight barrels, and when headed up filled with water, and in this manner they arrive in Europe, in perfect order, and have frequently sold in foreign ports at $20 per barrel.

Rakes are now made for the express purpose of gathering cranberries, and although these rakes tear the vines somewhat, yet the crop is not diminished by raking; on the contrary, it has been increased. Some years ago, a gentleman in Massachusetts commenced raking his little patch of one fourth of an acre. The first year it produced 12 bushels, the next 18, the third 25, and so on till his last harvest, when the crop amounted to 65 bushels. This increase is easily accounted for by the method of gathering with rakes—the pulling up a few of the vines loosens the ground, and although not intended, yet in fact the raking acts as a partial cultivation.

To promote the cultivation of this fruit, the American Institute is making arrangements to supply horticulturists with plants early in the spring, in either large or small quantities; and I would recommend those wishing to purchase, in this vicinity, or New York, to get their supplies in this way. (*a*)

B. G. BOSWELL.

Philadelphia, Jan., 1844.

(*a*) The editor or this paper will take pleasure in executing any orders which may be forwarded him for this purpose, as the American Institute will allow him the privilege of selections. Any other fruits required he will also procure of the best kinds, and at the lowest rates.

DRAINING SWAMP-LANDS.

A FARMER upward of 70 years of age, in this vicinity, having subscribed for an agricultural paper, and observing an article in it upon draining swamp-lands in England, immediately bethought him of what could be done with about six acres near his own dwelling. It was a perfect frog-pond, thinly covered with tamerack, spruce, and alders. He dug a ditch round the whole of it, with an outlet at one corner, and the winter following, when the swamp was frozen, went on and cut down all the wood and brush, carried off the wood, and heaped the limbs and brush for burning. The next summer being a dry one, he burned off nearly everything combustible. The next year, what was previously swamp became dry and compact enough to bear a heavy yoke of oxen; he then had an anchor made with three sharp flukes or prongs, which would catch under the roots, and with this he dragged out nearly every stump and root on the six acres. These were heaped up into piles, and when dry, burned. He now marked the wet spots, and the winter following, sledded from a gravelly hill joining the swamp, sufficient dirt to make those spots dry and hard. The next year he harrowed the land and sowed with timothy, clover, and red-top, and, instead of an unsightly frog-pond, and rookery for blackbirds to harbor and destroy his corn, he has a beautiful meadow yielding three tons of hay to the acre. He has given it a light top-dressing of manure to warm and sweeten it, and now wonders that generation after generation should have passed away without having made this simple improvement.

J. THOMAS.

Worcester, Mass., Jan. 4, 1844.

WORN-OUT LANDS.

I FIND Massachusetts is full of worn-out land—large farms, not a tittle of which are cultivated, as they ought to be. These frequently have large houses on them, many of which have cost more than the farms would sell for. The sons of their owners, instead of staying at home and educating themselves for cultivating these lands in an improved manner, in many instances emigrate south and west in quest of a fortune, which one half the time they do not obtain after years of hard struggling and suffering, or they turn merchants and soon fail, or take to a starving profession already too full and overflowing; leaving their father, after draining every cent they can from him for a college education or an outfit, to carry on the farm as he best may in his old age. Thus situated, he can not afford to hire laborers to assist him, and he has no heart to make improvements himself; he therefore goes on in the old routine, makes what he can, and sends his yearly gains, if any there happen to be, to purchase new lands in the west. I find such a course as this, one of the greatest bars to improvement in my native state.

Many of the farmers now are alarmed at the facilities which the western railroad offers for bringing western produce to Boston; but I think these fears are without cause, for they can turn their attention in Massachusetts to raising fruits, vegetables, and indeed all such bulky articles as can never be transported any great distance at a profit. Besides, the manufacturing villages, since the revival of business, are affording good markets to everything raised in their vicinity; and by use of the railroads, the farmers can transport many things to Boston and sell at a fair profit, which they could not do before; and then they make their purchases there, which saves them from 10 to 20 per cent., so that upon the whole, I think the railroads in a few years, from the great facilities they offer, will even be found beneficial to the farmers here themselves.

A TRAVELLER.

SILK CULTURE.

SINCE I met you in New York, I have had a French treatise on silk handed me, a part of which is translated. It recognises the use of the mulberry-leaf for making paper of all kinds, and the fibrous bark for fabrics. While I have been day and night examining the subject, French ingenuity has stepped in before me, and done up the thing; but it has not given the whole manner of operating, which we need. Have you not some ingenious mechanics to construct a machine, with the best means of separating the bark from the wood, and the best mode also of converting the foliage into good paper? It will be done sooner or later I am confident; but we want it in the spring, particularly to use up the stalks to be headed down in April or May. The first No. of the translation from Mr. Fraissinet, you will see in the Hampshire Gazette of this week, on the subjects of mulberry paper and bark-silk. No. 2 may appear next week, and is very important to silk-growers, showing that there is nearly 100 per cent. difference in the use of foliage for raising cocoons. That to produce one cwt. of cocoons, 20 to 22 cwt. of foliage of grafted, or trees propagated by grafting buds, cuttings, or layers, is necessary; while twelve to thirteen cwt. of leaves from seedlings will accomplish the same result. If such be the fact, and that the trees from seed are more hardy and durable than any other mode of propagation, why may it not be useful to renovate mulberry plantations every few years? This idea is not altogether new; an eminent and skilful botanist advanced a similar suggestion to me on the introduction of the Canton and Asiatic seeds. As respects myself, I have, and can raise, plenty of seeds of the best kinds from my plantations. It may be found, that as the trees acquire age, the ground will be filled with roots, and that many decay and die.

Since my return from New York, a discovery has been made here by competent and experienced operators, and by sure tests, that the Pongee silk, so called, is a vegetable production, (as I had supposed, from the fibrous bark,) and that it never passed through the silk-worm. The test is satisfactory to my mind.

To encourage the silk culture, a bounty is needed, and I hope our good legislature will encourage new beginners. We had a bounty which has expired by its own limitation. I wish for something

new—say a bounty of 15 or 20 cents on the pound of cocoons. One dollar on the pound of silk from the fibre of the bark, and 50 cents on every ream of good printing or writing paper. I am aware of the importance of uniform reeling, but we do not yet raise enough cocoons to establish filatures which will be needed as soon as the cocoons can be produced. Will not the proposed bounty, if granted, stimulate the new beginner to raise as many trees as he can, to feed his early one and open crop, save his after foliage for paper, and then the bark for clothing? This will be something new to the people. Will you suggest these to General Tallmadge and others in your paper?

D. Stebbins.

Northampton, Mass., Jan. 2, 1844.

We have received the Hampshire Gazette containing No. 1 of the translation from Mr. Fraissenet, and shall be obliged if Dr. Stebbins will continue them; we will endeavor at least to give a synopsis of their contents, for those interested in this subject.

CULTURE OF POTATOES, &c.

At your request, I send you a specimen of the pink-eye kidney potato, which is a fair sample of my last year's crop, together with the mode of culture.

Benefit of Lime in Destroying Insects.—On the first of May, the ground, a sandy loam, on which turneps had been grown the previous year, was plowed very deep, harrowed, and furrowed three feet apart—the furrows filled with rotted manure, incorporated with oyster-shell lime and charcoal dust. The largest potatoes were then selected for seed, cut into single sets of one eye each, and planted on the manure, eight inches apart, and covered with the plow. After this the field was top-dressed with lime and charcoal dust, in equal quantities, at the rate of 200 bushels to the acre, and harrowed. The potatoes were hoed and plowed twice during the season. On the 12th of October they were dug, and although the furrows were too far apart, and the potato a shy bearer, the produce was 432 bushels per acre, free from decay or disease. My object in liming, was to destroy any worm or insect that might be concealed in the soil.

Contiguous to the potatoes, I sowed a quarter of an acre with ruta-baga seed, in drills. On this crop I did not use lime or charcoal dust; the consequence was the entire loss of the crop, which was destroyed by worms. Adjoining, I sowed a quarter of an acre with orange carrot seed, which were soaked in strong ley 12 hours, and sown in drills, previously filled with a composition formed of ashes, salt, muck, poudrette, lime, and charcoal dust, in nearly equal quantities, except salt, a small portion of which only was used. The quarter of an acre produced 190 bushels, and would, in my opinion, have yielded one third more, had the blossoms been cut off.

Robert L. Pell.

Pelham, Ulster Co., Jan. 6, 1844.

REVIEW OF LIEBIG.

Chemistry in its Applications to Agriculture and Physiology. Third Edition.

It is rather more than three years since this remarkable book was laid before the British Association. In that time two editions have been printed; they have been received on the one hand with most extravagant praise, and on the other with unmeasured censure. The first was attributable to the clearness with which some views that are really new, and others that are thought so, were brought before the public; the second arose from the manner in which Professor Liebig was so ill-advised as to attack vegetable Physiologists, of whose science he knows much less than they of chemistry. The issue of all this has been productive of much good. Had it not been for English trumpets, public attention would never have been so strongly directed to Professor Liebig's excellences; and we have to thank the German catcalls that his own thoughts have been so advantageously turned to the correction of his deficiencies. The two together have produced a book infinitely superior to its predecessors, and to a very considerable extent unlike them. We hear no more of starch consisting of concentric layers of wax and amylin; the exaggerations about grand experiments on woods and meadows are omitted, as is the materialism about the unimportance of a vital principle, (p. 56, ed. 2.) and the offensive observations upon physiologists. In the place of these and other subjects that are cancelled we have a very considerable quantity of new matter. A new chapter is devoted to the consideration of "the Formation of Arable Land," another to "Fallows;" that on the "Rotation of Crops," is almost entirely rewritten, and so is the chapter on manures; while a thirteenth chapter is devoted specially to a general retrospect of the theories included in the previous pages. To these are added supplementary chapters on the sources of ammonia, and on the questions whether nitric acid is food for plants, and whether the nitrogen of the air takes a part in vegetation. In an appendix are given at length the important experiments of Wiegmann and Polstorf on the food of plants.

In the former editions ammonia was the great subject of discussion. As chemists seem agreed in considering it improbable that plants should obtain their nitrogen directly from the air, and as all plants contain that element, ammonia seems to be the only source by which it can be supplied; and in all probability this is a just view of the case. Nevertheless it is by no means *proved* that larger quantities of ammonia than the atmosphere naturally contains are necessary to the most healthy vegetation; and although it is certain that matter rich in ammoniacal salts is among the most powerful of manures, it has by some been supposed that other substances constantly present along with the ammonia may be of equal or even greater importance. Such is sulphuretted hydrogen; such are phosphates. This opinion is now taken up by Professor Liebig, who devotes a whole chapter to its consideration. After stating that animal matter contains invariably the substances named albumen,

fibrin, and casein, all three rich in sulphur, he inquires:—

"From what source does the animal body derive these three fundamental components? Unquestionably they are obtained from the plants upon which the animals subsist; but in what form and in what condition, are they contained in plants?

"Recent investigations of chemists have enabled us to answer these questions with positive certainty. Plants contain, either deposited in their roots or seeds, or dissolved in their juices, variable quantities of compounds containing sulphur. In these nitrogen is an invariable constituent. Two of the compounds containing sulphur exist in the seeds of cereal plants, and in those of leguminous vegetables, such as peas, lentils, and beans. A third is always present in the juices of all plants; and it is found in the greatest abundance in the juices of those which we use for the purposes of the table.

"A very exact inquiry into the properties and composition of these substances has produced a very remarkable result, namely, that the sulphur-compound dissolved in the juice of plants, is, in reality, identical with the ALBUMEN contained in the serum of blood, and in the white of an egg; that the sulphur-compound in the seeds of the cereals possesses the same properties and composition as the FIBRIN of blood: and that the nutritious constituent of peas, beans, and lentils, is actually of the same nature and composition as the CASEIN of milk. Hence it follows that plants, and not animals, generate the constituents of blood containing sulphur. When these are absent from the food given to an animal, its blood can not be formed. From this it also follows, that vegetable food will be proportionally nutritious and fit to sustain the vital processes of the animal body, according to the amount of these ingredients contained within it.

"There also exists certain families of plants, such as the cruciferæ, which contain peculiar sulphur-compounds much richer in that element than the vegetable constituents of blood. The seeds of black-mustard, the horse-radish, garlic, onions, and scurvy-grass, are particulariy marked in this respect. From all of these plants we obtain, by simple distillation with water, certain volatile oils, differing from all other organic compounds not containing sulphur, by their peculiar, pungent, and disagreeable odor.

"These compounds containing sulphur are present in the seeds of all plants, as well as in the plants themselves; and as they are particularly abundant in cultivated plants employed for animal nutrition, it is quite obvious that a substance containing sulphur is absolutely essential to the development of such compounds, in order to supply to them their proper proportion of this element."

These are very remarkable statements, and require to be considered with great attention. The opinion, however, that sulphur is beneficial to plants is not originally Liebig's; he, on the contrary, so lately as 1842, adopted the erroneous views of Christison and Turner, and regarded the "hydrosulphate of ammonia (sulphuret of ammonium) as a deadly poison to vegetables, the properties of which we can not change by dilution." (Ed. 2, p. 195.) It was, however, proved experimentally by Mr. Edward Solly, (*First Report of the Chemical Committee of the Horticultural Society*, p. 9, June, 1842,) that this was a mistake.

"I made use of the hydrosulphuret of ammonia, the very compound described by Liebig as being a 'deadly poison;' but in place of killing plants, I found that in small quantity it produced decidedly beneficial effects: in some cases when it was applied to plants in an unhealthy state from the action of other substances, it had the effect of invigorating them, and of restoring their leaves to a healthy, green, and crisp condition. The plants with which these effects were best observed were the garden-lettuce and the common Windsor-bean. The solution of the hydrosulphuret of ammonia employed was prepared by mixing a saturated solution of the compound with fifty times its bulk of water: such a solution had a most nauseous disgusting smell, and contained of course a large quantity of sulphuretted hydrogen. The plants under experiment were selected from many, and were of the same age and size, and as far as possible in the same healthy state of growth. Some were watered with common water, others with a dilute solution of hydrosulphuret of ammonia. At first only a few drops of the solution were given, but finding that this produced little or no effect, the dose was increased, and as much as half an ounce a day, and sometimes even more, was given to each plant; it was found that those thus treated became stronger and sturdier, their leaves were of a bright deep-green, the space between the nodes, or the distance from leaf to leaf, was shorter, and the stems were stronger, and the whole plant more flourishing than in those watered in the ordinary way, although all other circumstances were alike, and care was taken to place all under the same condition, by exposing them equally to air and light, and giving them the same quantity of water every day. Plants in a languid state from overdoses of nitrate of potash, or soda, or other saline manures, if not too much injured by their previous treatment, appeared to recover more rapidly when watered with the solution of hydrosulphuret of ammonia, than when merely treated with common water. In some of these latter cases a much stronger solution was employed than that already mentioned, containing two drachms of the saturated solution of hydrosulphuret of ammonia in fifty of water, and of this eight drachms were given daily. For sometime after thus watering the plants, the earth retained a strong smell of sulphuretted hydrogen, and the water which drained through, when tested by a salt of lead, evidently contained a large quantity of that gas." And then he proceeds to point out the extreme improbability, that a substance so constantly evolved from decaying matter as sulphuretted hydrogen should *not* be the food of plants. "Its presence in manures is well-known and readily proved, but its presence in the air, in which it exists in exceedingly minute quantity, is less readily shown. We know, however, that it is constantly being formed on the surface of the earth, and we have evidence of its presence in the air by several effects, such as the tarnishing of some metals, and the blackening of white paint;

these effects, which take place gradually and slowly, are principally occasioned by the presence of sulphuretted hydrogen and its compounds, more particularly the hydrosulphuret of ammonia, in the air. Lastly, if the vegetable kingdom is the great means of purifying the air, and retaining it in a fit state for the respiration of men and animals, the absorption and decomposition of sulphuretted hydrogen by plants must constitute not the least important of their functions."

We believe, too, but can not lay our hands upon the passage, that Dr. Lankester had previously brought forward some evidence to show that sulphuretted hydrogen is not injurious to vegetation.

The source from which sulphur is obtained by plants is not the atmosphere, according to Dr. Liebig, but the soil, whence it is furnished by the decomposition of sulphates. "The air," he says, (p. 63,) "can not contain any substances in which sulphur is present, unless, indeed, we except *minute and scarcely appreciable traces* of sulphuretted hydrogen." We confess our inability to understand this. That ammonia is obtained from the air was one of the author's triumphant proofs, and yet it exists there in as minute and inappreciable a quantity as sulphuretted hydrogen; and we can not comprehend why the latter should not be thus supplied as well as the former. If not, what, let us ask, becomes of the volumes of this gas continually escaping from the surface of the soil? Are we to suppose that it is all consumed in forming sulphurets? Surely not.

Next to sulphur stand phosphates in their importance to vegetation. This, indeed is not a new doctrine; on the contrary, their value was pointed out in the former editions; not, however, we think, so strongly as now. We are rejoiced to find Prof. Liebig ranged on this side of the question, for it seems to us that if practical agriculture points out one thing more strongly than another, it is the great importance of phosphates. Nothing is more remarkable than the action of the superphosphate of lime on plants in gardens; no single agent that we have yet seen employed can be compared to it. This probably arises from garden-soil being rich in all other substances except phosphoric acid, which is always largely carried off, and but sparingly returned in the processes of garden-culture. The remarks of Prof. Liebig on this subject are too striking to be omitted:—

"In a former letter I showed you how great a waste of phosphates is unavoidable in England, and referred to the well-known fact that the importation of bones restored in a most admirable manner the fertility of the fields exhausted from this cause. In the year 1827 the importation of bones for manure amounted to 40,000 tons, and Huskisson estimated their value to be from 100,000*l.* to 200,000*l.* sterling. The importation is still greater at present, but it is far from being sufficient to supply the waste.

"Another proof of the efficacy of the phosphates in restoring fertility to exhausted land is afforded by the use of the guano—a manure which, although of recent introduction into England, has found such general and extensive application.

"We believe that the importation of one hundred-weight of guano, is equivalent to the importation of eight hundred-weight of wheat—the hundred-weight of guano assumes in a time which can be accurately estimated the form of a quantity of food corresponding to eight hundred-weight of wheat. The same estimate is applicable in the valuation of bones.

"If it were possible to restore to the soil of England and Scotland the phosphates which during the last fifty years have been carried to the sea by the Thames and the Clyde, it would be equivalent to manuring with millions of hundred-weights of bones, and the produce of the land would increase one third, or perhaps double itself in five or ten years.

"We can not doubt that the same result would follow if the price of the guano admitted the application of a quantity to the surface of the fields, containing as much of the phosphates as have been withdrawn from them in the same period.

"If a rich and cheap source of phosphate of lime and the alkaline phosphates were open to England, there can be no question that the importation of foreign grain might be altogether dispensed with after a short time. For these materials England is at present dependant upon foreign countries, and the high price of guano and of bones prevents their general application, and in sufficient quantity. Every year the trade in these substances must decrease, or their price will rise as the demand for them increases.

"According to these premises, it can not be disputed, that the annual expense of Great Britain for the importation of bones and guano is equivalent to a duty on grain: with this difference only, that the amount is paid to foreigners in money.

"To restore the disturbed equilibrium of constitution of the soil,—to fertilize her fields,—England requires an enormous supply of animal excrements, and it must therefore excite considerable interest to learn that she possesses beneath her soil beds of fossil *guano*, strata of animal excrements, in a state which will probably allow of their being employed as a manure at a very small expense. The coprolithes discovered by Dr. Buckland, (a discovery of the highest interest to Geology,) are these excrements; and it seems extremely probable that in these strata England possesses the means of supplying the place of recent bones, and therefore the principal conditions of improving agriculture—of restoring and exalting the fertility of her fields.

"In the autumn of 1842, Dr. Buckland pointed out to me a bed of coprolithes in the neighborhood of Clifton, from half to one foot thick, enclosed in a limestone formation, extending as a brown stripe in the rocks, for miles along the banks of the Severn. The limestone marl of Lyme Regis consists, for the most part, of one fourth part of fossil excrements and bones. The same are abundant in the lias of Bath, Eastern and Broadway Hill, near Eversham. Dr. Buckland mentions beds, several miles in extent, the substance of which consists in many places, of a fourth part of coprolithes.

"Pieces of the limestone-rock of Clifton, near Bristol, which is rich in coprolithes and organic remains, fragments of bones, teeth, &c., were subjected to analysis, and were found to contain above

18 per cent. of phosphate of lime. If this limestone is burned and brought in that state to the fields, it must be a perfect substitute for bones, the efficacy of which as a manure does not depend, as has been generally but erroneously supposed, upon the nitrogenized matter which they contain, but on their phosphate of lime. The osseous breccia found in many parts of England deserves especial attention, as it is highly probable that in a short time it will become an important article of commerce. What a curious and interesting subject for contemplation! In the remains of an extinct *animal* world, England is to find the means of increasing her wealth in agricultural produce, as she has already found the great support of her manufacturing industry in fossil fuel,—the preserved matter of primeval forests,—the remains of a *vegetable* world."

We quote this passage for the sake of showing the vivid style of the author, and not because we quite concur in Prof. Liebig's anticipations concerning coprolites, whose value is probably exaggerated.

From these we turn to other considerations. It will be remembered that in former editions the author adopted, as a proved fact, the theory of excrementitious deposites by plants, and even went so far as to assert that it was a necessary consequence of their secreting power, that excrementitious matters should be formed. We and others have pointed out the objections that must be taken to these views; and upon turning over the pages of this new edition we at first believed that they had been quietly abandoned. We find, however, at p. 75, that the accuracy of Macaire Prinsep's views is still unquestioned, at least in part. In this instance Dr. Liebig relies upon the following case:—

"Let us," he says, "consider the composition of the ashes of two fir-trees, as analysed by an acute and most accurate chemist. One of these grew in Norway, on a soil of invariable composition, but to which soluble salts, and particularly common salt, were conveyed in great quantity by rain-water. How did it happen that its ashes contained no appreciable trace of salt, although we are certain that its roots must have absorbed it after every shower?

"We can explain the absence of salt in this case by means of the direct and positive observations referred to, which have shown that plants have the power of returning to the soil all substances unnecessary to their existence."

But to our apprehension, there must either be some error in these analyses, or the trees never could have absorbed any salt. For if they had ever taken it up, there *must have been some portion remaining at the time when they were felled.* It strikes us that this case *proves too much.*

But if the old theory of vegetable excrements be virtually abandoned, or limited to the extrication of oxygen, (p. 170,) we have a new one, which is not a little curious. Professor Liebig considers bark a kind of excrement. To avoid the suspicion of misrepresentation we quote his words:—

"These barks are in so far true excrements, that they arise from living plants, and play no further part in their vital functions; they may even be removed from them, without thereby endangering their existence. It is known that certain trees throw off annually their barks: this circumstance viewed in its proper light, shows that, during the formation of certain products formed by the vital processes, materials arise which are incapable of experiencing a further change.

"There is every reason to believe that this separation takes place over the whole surface; it is observed not only on the stem, but also on the smallest twigs; and hence we must conclude that the same excretory process goes on in the roots."

We will not set about seriously refuting this strange hallucination, but content ourselves with asking whether scurf-skin, the points of our hairs, the ends of our nails, or the slough of a snake, are excrements?

We had hoped that Professor Mohl had put an end to the folly of asserting that dryness of the soil is of no consequence to plants *when matured;* that is, we suppose, when the fruit is ripened. We are, however, mistaken. Professor Liebig maintains this opinion with as much pertinacity as if there was not a tree or bush within a hundred miles of Giessen:—

"When a plant is quite matured, and when the organs by which it obtains food from the atmosphere are formed, the carbonic acid of the soil is no further required.

"Deficiency of moisture in the soil, *or its complete dryness,* does not now check the growth of a plant, provided it receives from the dew and from the atmosphere as much as is requisite for the process of assimilation. During the heat of summer it derives its carbon exclusively from the atmosphere."

It seems useless to put him right upon such points, for he does not appear to be acquainted with some of the commonest facts connected with vegetable life. We shall therefore dismiss the subject for the present without further comment, in the hope that with time this learned chemist may become sensible of such errors as this, and his speculations about lactescent plants, which he still maintains have *their moisture secured from evaporation by a coating of caoutchouc and wax, which surrounds them by a waterproof envelope!!*

Gardeners' Chronicle.

NORTHERN CALENDAR FOR FEBRUARY.

CONTINUE to look well after your stock. This and the following, are the trying months for animals, and if carried well through these, you may more safely trust them afterward. As all animals are accustomed to green food throughout a great part of the year, such as are now kept on dry, should have their condition carefully observed, and their food varied to suit their wants. *Roots* ought always to be provided for an occasional change. Potatoes, sugar-beet, mangol-wurzel, ruta-baga, carrots, or parsneps, may be given, as they can be most profitably raised by the farmer. According to Davy the order of their nutritious properties, pound for pound, stand thus: 1, potatoes, 2, sugar-beet, 3, mangol-wurzel, 4, parsnep and carrot, 5, ruta-baga, 6, and by far behind all others, the common turnep. We are of opinion that the carrot and parsnep are equal to the

sugar-beet, and the better varieties, perhaps, should stand second only to potatoes. Chaff, grain, bran, &c., may also occasionally be given, and for working animals, grain invariably at all times. If you expect hens to lay during the winter, they must have a warm room, and plenty of suitable food. A stone, brick, or what is better than either, a clay house, impervious to wind and cold, with a supply of oats, shrunk wheat, barley, and even corn, with some animal food added, in addition to a supply of gravel and old mortar or lime, and water, will give you a constant supply of fresh eggs all winter.

Finish threshing your grain, and have it stored beyond the reach of rat, mouse or weevil. Scions may be cut, during this and the two succeeding months, for grafting, and carefully laid away in a cool, damp place, till required for use. If the roots have not been assorted when stored for the winter, the best should now be selected for seed and use, and the remainder fed out to the stock previous to a growth of green food in the spring. The young animals, calves, lambs, &c., should be carefully protected from cold, and have an abundant supply of food. When it is intended to raise animals on the farm, it is better to have them dropped from the latter part of March to the middle of May. The weather is then warmer and fresh feed abundant, and the young can be reared with half the expense and risk that attends them during severe weather. But such as are near a market, and wish to send in early calves, and lambs, may find an advantage in having them come much earlier in the season; but all the hopes of the farmer will be disappointed, by neglecting the proper means of protection. Such cattle as have been suffered to get poor, will probably be found to have lice, which at this season, collect around the roots of their horns. They may be destroyed by a strong decoction of tobacco juice, or Scotch snuff, lard, fish oil or soft soap, applied on the top of the head, and along the back to the root of the tail; also spirits of turpentine, mercurial ointment, and corrosive sublimate, are effectual remedies, but dangerous when cattle can lick the part where they are applied, both being a deadly poison. After the cattle are once rid of lice, keep them in good condition, and they will be but little exposed to a renewal of the disease. Prepare for making maple sugar the last of this month.

Endeavor to finish breaking hemp this month, as March will be a much more busy one. If the weather be open continue plowing.

Kitchen Garden.—Sow early cucumbers and melons in hot beds. If well managed, the cucumbers sown early in this month will produce fruit in April. Celery can be sown in a warm border, and will be ready to vegetate the first mild weather. The directions for last month will apply equally well to this.

Fruit Garden and Orchard.—Gooseberries, currants and raspberries, may now be pruned if the weather be tolerably mild. Fruit-trees that grow too luxuriantly and do not bear, should be pruned in the roots. Cut away the wood in grape-vines that have borne fruit the preceding season, and leave the wood formed that season to bear fruit the ensuing year. If grape pruning is left until the sap begins to rise, the vines will bleed profusely, and suffer much injury. It is said that the first bud on a shoot will not produce fruit. Consequently a second or third should be left in pruning.

Flower Garden and Pleasure Grounds.—See directions for December and January. Finish pruning hardy flowering shrubs. Cut off all dead wood and straggling or interfering branches close to the body or limbs. Keep the gravel walks neat and clean, and roll them after the winter frost.

SOUTHERN CALENDER FOR FEBRUARY.

In the beginning of this month repair all your fences, and employ your men in cutting up and rolling logs—and your women and children in knocking down cotton-stalks, when not too large, with a stick, cutting corn-stalks, firing log-heaps, and burning chunks and the brush that may have fallen from trees, clearing up hollows, &c., and be in readiness to commence plowing your cotton-fields as soon as the season will admit. By the latter end of the month, if the weather be favorable, keep as many plows running as is convenient when the earth is in proper condition. By keeping busy at this season of the year, it will enable you to control your crop, and give you time to do your work effectually, which is one half of the battle.

If your land was in corn or cotton last year, run off the rows in the old water furrow with a short plow this year, using two horses, and running deep. Then, with a turning plow, throw to this two furrows, one from each side in order to reverse the last beds. Leave the ground in this condition until a day or two before you wish to plant, and then break out the entire surface between the rows—the baulk. Prepare your ground and sow your tobacco seed, if you have not done it before.

Give to your cows boiled cotton seed, with a little chopped corn added. It will give the butter a rich flavor and fine yellow color. The seed must be well cooked, which will require but a few minutes.

Mark off your sweet-potato ground some time in this month with a double-horse plow, and let it lie until it becomes well settled by two or three rains.

If you have a good grape-vine, take care of it, and propagate others from it by cuttings and layers, and its fruit will repay your labor. If you have not, buy one and plant it the present spring. The second year after planting, it will produce you fruit, which will increase every year as the plant enlarges. The fruit will be found to be wholesome and grateful, and you will realize the pleasure of "*sitting under your own vine*" during the intense heat of summer. The native varieties most worthy of cultivation, are the Isabella, Winne, and Catawba. If you wish foreign fruit, the sweet-water, Chasselas, black cluster, and Burgundy, are to be preferred. A little experience will make you familiar with their management.

As soon as the black frosts are over, which usually occurs by the last of the month, and the ground becomes sufficiently dry, the covering of the cane that was planted in autumn or early winter, should be reduced to one or two inches, by scraping with hoes the earth from the top of the drills, toward the centres of the spaces between the rows. After this, the hoes followed by the plows, should be passed through the fields about every ten days, in order to keep down the grass and weeds.

Should the season have been so backward as to have prevented you from finishing planting your sugar-cane, it can be done at the close of this month. Do not cover it at a depth exceeding two inches.

Sow all kinds of early melons, cucumbers, kidney beans, squashes, asparagus, radishes, lettuce, and garden cresses for seed. Sow late dwarf peas and onion seed, carrots, parsneps and red beets. Sow tomatoes in hot beds, or in boxes in the house, if the season is backward; the egg tomato and the golden drop are the best kinds. A compost of pigeon-dung and earth will give them an early start.

This month is proper for grafting the cleft. If your trees have not been pruned, do it at once. Set out fig trees—plant hop roots and all kind of aromatic herbs. Set out cabbages, lettuces, carrots, parsneps, turneps, &c., designed for next year's seed. Sow oats, plants Indian corn, and early Irish potatoes.

FOREIGN AGRICULTURAL NEWS.

By the arrival of the steamship Britannia, we are favored with our usual files of journals up to the 4th of January. In addition to these, we are indebted to Mr. P. L. Simmons, foreignnewspaper agent, London, for a file of the Sussex Express, and Illustrated News. Our journals are rich in all sorts of matters appertaining to agriculture, and we would be glad of ten times the space that we have to spare this month for making extracts, for our readers would find them of absorbing interest.

MARKETS.—*Ashes* were held for higher terms. *Cotton* has advanced from ⅛d. to ¼d. per lb., and was extremely firm. Speculators and the trade were eager to purchase, especially of the common and middling qualities, and a large business had been done the preceding month. During the first four days of January, 50,000 bales changed hands at an advance of ⅛d. per lb. Stock on hand on the 1st of January, 653,900 bales, against 456,600 bales at the same period last year, and 429,830 the year before. The consumption of cotton in England in 1843 has increased about 150,000 bales. *Wheat* and *Flour* have undergone a slight reduction of price, although it is acknowledged that the harvest in Great Britain last year was a deficient one, and that considerable importations of bread-stuffs will be needed. It is the general opinion that wheat and flour must advance soon. Incendiary fires of wheat-stacks continue throughout the south of England. *Provisions* were in good demand, and the operations the past year in American, have been heavy. A year since to the great body of the English people, our provisions were scarcely known, and the trade is yet only in its infancy. They have now completely established themselves in the English market and overcome prejudice. The finer qualities of cheese were brisk; *Beef*, *Pork*, and *Lard*, in moderate request. The latter article has fallen a trifle. *Naval Stores* were in tolerable demand. *Rice* and *Tobacco* quiet and without change.

Money continues very abundant, and capital is accumulating in large masses, and seeking investment at the lowest rates of interest. The gold mines of Russia have been uncommonly productive the past year, and the precious metals seem to be in abundance everywhere in Europe.

American Stocks of those states which have faithfully paid their interests are rising.

Business generally is in a prosperous condition.

Death of Mr. Loudon.—This celebrated agricultural writer died at Bayswater, on the 14th December, in his 60th year, and has left a void no other man in Great Britain will easily fill.

Death of Dr. Van Mons.—This excellent and scientific horticulturist, died at Louvain in September last, in the 78th year of his age. He was the possessor of a nursery and garden for a long time in Belgium, and was celebrated for his new varieties of fruits, especially pears, and we believe produced also many new flowers.

Smithfield Cattle-Show.—The great event of the month was the annual show of fat stock at the Smithfield market, which began on the 6th of December, and continued till the 9th. The Illustrated News gives us portraits of the prize animals, and the show is said to have eclipsed all others which have gone before it. We notice the Short-Horns are well in the ascendant this year. A cow of this breed, bred by Sir Charles R. Tempest, took the gold medal; and an ox of Earl Spencer's took the silver medal, being the first prize in Class I. A Hereford ox belonging to Mr. Watson, stood second, while the Short-Horns gained the third and fourth prizes. In Class II. the Short-Horns were first and fourth, the Herefords second and third. In Class III. a North Devon steer took the first prize, and a Hereford the second. In Class IV. the same. In Class V. a Hereford took the first prize. In Classes VI., VII. and VIII. for cows, the Short-Horns took all the first and second prizes. The show of sheep and pigs was good, but we have not room for details. Prince Albert was among the exhibiters, though he took no prizes. This could hardly be expected for so young a farmer, and we can only wish him better luck next time. He attended the show in person, handling the stock as usual. There were an unprecedented number of visiters present, they being calculated at upward of 60,000.

R. L. Allen.—We notice that the communication of Hints for the Management of Hens, of our correspondent above, is copied at length in the British Farmers' Magazine for January.

Prolific Potatoes.—A friend of mine sent me a potato in April, and mentioned at the same time that it was a very prolific variety. The potato weighed about 6 oz. I planted it whole, and last week took up the produce, which weighed 29 lbs., and consisted of 66 potatoes, 26 of the largest weighing 21 lbs. The above is the largest return I have ever seen.

Blackberry Jelly.—Put the fruit into a jar, tie paper over it, and stew in a sauce-pan of boiling water, or by putting the jar into the oven; strain off the liquor, and to every pint of juice, add a pound of loaf-sugar: put all into a preserving-pan, simmer and skim it. When it will jelly upon a plate, it is fit to be put into jars for use.

Cure of the Mange.—This may be effected by washing the animal occasionally with the water in which potatoes have been boiled.

Breeding Bulls.—In an excellent article on this subject by Mr. Goodwin, in the Veterinarian, he claims docility of temper as an important point; and in illustration of the merit of this, gives the following anecdote:—

The other day, on looking over the well-arranged and well-managed portion of the agricultural department of the Little Park, at Windsor, a fine short-horned bull, in the shafts of a cart, attracted my attention. Mr. Ingal, the judicious manager of that establishment, observed that he was truly valuable, not only as the best and most useful slave about the premises, being in the continual practice of drawing from two to three tons weight in a cart alone, but as an animal possessed of the finest temper possible. Mr. Ingal, in continuing his narration, said that on one occasion he was turned into an adjoining pasture with another bull, when one of the farming men, in his usual occupation, had occasion to pass not far from them: one of the bulls commenced a furious attack on the man, got him down, and was on the point of tossing him with his horns. This ever-to-be revered and celebrated beast, seeing what was passing, set off at speed to the scene of action, not to assist the monster in the bloody work he had begun, but to the aid of the defenceless man within his grasp. Feeling confident in his power, he charged the ferocious brute, and was instantly victorious. The man, during this conflict, lay prostrate in a state of fear and insensibility. On the return of his faculties he found himself still within the reach and power of a bull, but not the vicious beast that had first assailed him, but his fellow-slave, who, after his victorious conflict with the monster, had returned to him, and, in order to pacify him and convince him that he had not anything to fear, the docile creature began to lick him. The man soon perceived that it was his old friend, and got up and heaped on him a load of caresses, and returned to his usual occupation without much injury.

Editor's Table.

THE BOSTON TRAVELLER is informed that an editorial appeared in one of its July or August papers, with the following sentence: "Yet we do not hold to the idea which was sometime ago advanced by Mr. Allen, of New York, that any person can *at will* breed Ayrshires by a cross of the Durham Short-Horn with our own native stock." As we published a full explanation of our views in the June No. for 1842, page 97, of the Cultivator, showing that we had been misunderstood, we thought the Traveller had done us injustice in not taking the remarks at that time for our opinions on this subject. The Traveller now says, in its paper of 6th of January:—

"We know Mr. Allen has been charged with declaring that we can make as many Ayrshires in this country as we please, by crossing the Durham with our best native cows. We regarded this as rather too literal a construction of Mr. Allen, and our understanding of the matter was, that he intended to convey the idea that Ayrshires were the result of a cross of the native cattle of Scotland with the Durhams, and that we could obtain a similar result by a cross of our natives with the Durhams."

This is satisfactory, and we are obliged to the Traveller for the explanation, for we deemed the first sentence quoted rather a *misstatement*, but more especially this, which immediately followed it: "He admits, however, if a native cow of the Ayrshire stock fifty years ago could now be found, a near approximation might be obtained by this cross." We have not the slightest recollection of ever making any such admission as this quotation contains, and believe that the Traveller is entirely in error in attributing it to us.

TRANSACTIONS OF THE WORCESTER COUNTY AGRICULTURAL SOCIETY FOR THE YEAR 1843.—This is an octavo pamphlet of 68 pages, the first 20 of which are devoted to Mr. Hudson's address at its late annual meeting, and the residue consists of the reports of the various committees upon the occasion. We have perused these Transactions with no less pleasure than profit, and are glad to see them printed in such a form as to be preserved, and easily referred to hereafter.

Comfrey Root, or Symphytum.—We learn by the Portsmouth Journal, that Mr. Robinson is of opinion, from an imperfect experiment made by him on a small patch of ground, that he will be able next year to gather, at two cuttings, eight tons of leaves of the Comfrey root to the acre, which he says is excellent food for stock. The root is considered very nutritious for man or beast, and Mr. Rich, of Troy, N. H., asserts, that it can be harvested every two or three years, and will yield over 2,000 bushels per acre. We should think it advisable to try the experiment of a rod or two square of growing comfrey in this vicinity. It is cultivated by transplanting the roots, which grow wild in the fields, to any ground deep plowed and well pulverized.

Cane-Cutter.—We see by the Baton Rouge Gazette, that a Mr. Bryan has invented a cane-cutter which works by horse power, and cuts as much cane in 17 minutes as 19 hands can do in an hour. If this be so, it is the greatest labor-saving agricultural machine invented since Whitney's cotton gin.

Castor Oil.—It is not generally known, but it is a fact, that every planter might raise as much castor oil in one year as would be required on his plantation during several years. The plant from which it is made (the *recinus communis*) is cultivated largely in many of the middle and western states, but we believe it grows to greater perfection in Louisiana. We have one in our garden which is ten or twelve feet high, and full of beans. The process of procuring the oil is perfectly simple: boil the beans, bruised, in a bag, and as the oil rises, skim it off. It will be found as clear as olive oil.—*Planters' Ban. & Ag.*

Large Potatoes and a Great Yield.—We cut the following paragraph from the Planters' Banner, and shall be obliged if the editor will inform us how many bushels make the barrel at the south. Two bushels and three pecks is the northern measure, which would make, if the French arpent be the same as an English acre, at the rate of 660 bushels per acre—an almost incredible yield for sweet potatoes:—

"The editor of the Creole says that A. B. Dauterive, of St. Martin, has shown him a sweet potato weighing 5½ pounds. Mr. D. obtained two hundred and seventy barrels of sweet potatoes from one and an eighth arpents of land."

Cuba Tobacco.—The Louisville Journal says: We are glad to learn that a number of our agricultural friends to whom we gave Cuba tobacco-seed have been very successful in the cultivation of the plants. Our friend Lewis Sherley has a small and beautiful crop of this fine tobacco. The leaves are very large, and the plants remarkably thrifty; one of them we measured with a foot rule, and found it to be eight feet six inches high, and it is not done growing yet. There is no exaggeration in this statement, and yet it seems so incredible that we feel very much as an honest Irishman did on a certain occasion. Pat wished to induce some friends whom he had left behind in the Emerald Isle, to emigrate to this land, where, according to Franklin, roasted pigs run about crying "Come and eat me!" and in writing to his friends, he stated that a man could get meat three times a week. He showed his letter to his employer, who reproved him, and told him he got meat three times a day. "That's all very thrue, plase yer aner, but if I was to be afther tellin' thim so, they wouldn't believe me at all at all!"

The Journal need not have added the comical story of the Irishman to fortify its statement, for in the colder climate and poorer soil of this vicinity, we saw a Cuba tobacco-stalk last season over six feet high; and surely it is no great matter in a country like Kentucky, where hemp grows as large as a *good-sized tree*, to beat us in the small matter of a couple of feet in a tobacco-stalk.

—

TO CORRESPONDENTS.—J. M. S. We have not been able to ascertain yet the lowest price at which guano manure may be obtained, probably $4,50 per cwt.

Prof. C. It is much better to procure young Cedars, and indeed to transplant all evergreens, instead of sowing the seed. The islands in Lake Erie are full of them, and other parts of the west. The White Cedar makes a beautiful hedge. See Vol. 2d, page 177.

Agricola shall be furnished the required information soon respecting Pot-Ashes.

W. H. S. Let us have the results of the dairy, and the article on Cotswolds, at your earliest convenience.

T. C. P. Send plan of the piggery.

S. W. We shall take up the subject of China, and other breeds of pigs soon. We have latterly been called upon in various quarters for information on these points, and are in hopes of getting something new to communicate before writing.

Examiner, T. C. Peters, B. Hodge, T. D. X., C. T. Botts, S. S., M. W. Philips, T. R. R., Dendy Sharwood, A. R. D., if possible in our next.

REVIEW OF THE MARKET.

PRICES CURRENT IN NEW YORK, JANUARY 25, 1844.

ASHES, Pots,	per 100 lbs.	$4 50	to	$4 62
Pearls,	do.	5 06	"	5 12
BACON SIDES, Smoked,	per lb.	3½	"	4½
In pickle	do.	3	"	4
BALE ROPE	do.	6	"	9
BARK, Quercitron	per ton	23 00	"	24 00
BARLEY	per bush.	54	"	56
BEANS, White	do.	1 25	"	1 75
BEEF, Mess	per bbl.	6 00	"	7 00
Prime	do.	4 00	"	5 00
Smoked	per lb.	5½	"	7
Rounds, in pickle	do.	4	"	5
BEESWAX, Am. Yellow	do.	28	"	30
BOLT ROPE	do.	12	"	13
BRISTLES, American	do.	25	"	65
BUTTER, Table	do.	12	"	20
Shipping	do.	6	"	10
CANDLES, Mould, Tallow	do.	9	"	12
Sperm	do.	31	"	38
Stearic	do.	20	"	25
CHEESE	do.	4	"	7
CIDER BRANDY, Eastern	per gal.	35	"	40
Western	do.	28	"	35
CLOVER SEED	per lb.	10	"	11
COAL, Anthracite	2000 lbs.	5 00	"	6 00
Sidney and Pictou	per chal.	5 75	"	6 25
CORDAGE, American	per lb.	11	"	12
CORN, Northern	per bush.	51	"	52
Southern	do.	50	"	51
COTTON	per lb.	8	"	12½
COTTON BAGGING, Amer. hemp per yard.		16	"	18
American Flax	do.	15	"	16
FEATHERS	per lb.	25	"	31
FLAX, American	do.	8	"	8½
FLAX SEED, rough	per 7 bush.	9 00	"	9 75
clean	do.	10 00	"	11 00
FLOUR, Northern and Western	per bbl.	4 75	"	5 00
Fancy	do.	5 25	"	5 50
Southern	per bbl.	4 75	"	5 00
Richmond City Mills	do.	5 62	"	5 75
Rye	do.	3 37	"	3 50
HAMS, Smoked	per lb.	5	"	9
Pickled	do.	4	"	7
HAY	per 100 lbs.	55	"	60
HIDES, Dry Southern	per lb.	9	"	11
HEMP, Russia, clean	per ton.	180 00	"	185 00
American, water-rotted	do.	140 00	"	180 00
do dew-rotted	do.	90 00	"	140 00
HOPS	per lb.	7	"	9
HORNS	per 100	1 25	"	5 00
LARD	per lb.	5½	"	7½
LEAD	do.	3½	"	4
Sheet and bar	do.	4	"	4½
MEAL, Corn	per bbl.	2 50	"	2 62
Corn	per hhd.	12 00	"	12 50
MOLASSES, New Orleans	per gal.	30	"	32
MUSTARD, American	per lb.	16	"	31
OATS, Northern	per bush.	35	"	38
Southern	do.	32	"	34
OIL, Linseed, American	per gal.	75	"	80
Castor	do.	80	"	85
Lard	do.	55	"	65
OIL CAKE	per 100 lbs.	1 00	"	— —
PEAS, Field.	per bush.	1 25	"	— —
PITCH	per bbl.	1 12½	"	1 37
PLASTER OF PARIS	per ton.	2 00	"	2 25
Ground, in bbls	per cwt.	50	"	— —
PORK, Mess	per bbl.	8 75	"	10 00
Prime	do.	7 00	"	8 00
RICE	per 100 lbs.	2 37	"	3 00
ROSIN	per bbl.	65	"	95
RYE	per bush.	62	"	64
SALT	per sack	1 35	"	1 50
SHOULDERS, Smoked	per lb.	4	"	6
Pickled	do.	3	"	4
SPIRITS TURPENTINE, Southern	per gal.	32	"	33
SUGAR, New Orleans	per lb.	5	"	8
SUMAC, American	per ton	25 00	"	27 50
TALLOW	per lb.	6	"	7½
TAR	per bbl.	1 25	"	1 50
TIMOTHY SEED	per 7 bush.	13 00	"	15 00
TOBACCO	per lb.	3	"	6½
TURPENTINE	per bbl.	2 12	"	2 50
WHEAT, Western	per bush.	1 00	"	1 05
Southern	do.	90	"	1 00
WHISKEY, American	per gal.	23	"	25
WOOL, Saxony	per lb.	35	"	50
Merino	do.	35	"	40
Half-blood	do.	25	"	30
Common	3do.	20	"	25

New York Cattle Market—January 22.

At market, 1100 Beef Cattle, 40 Cows and Calves, and 2500 Sheep and Lambs.

PRICES.—*Beef Cattle*—The quality was inferior to last week, and previous prices were obtained with difficulty. We quote $4.25 *a* $4.75 to $5.25 *a* $5.50, with extra at $6.

Cows and Calves.—All sold at $14 *a* $26 each.

Sheep and Lambs.—Were all taken at $1.50 *a* $3.50, and a lot of prime Wethers at $5.50 *a* $6, according to quality.

Hay.—Sales of loose at 62½ *a* 81 cents per 100 lbs. by the load.

REMARKS.—*Ashes* are held above the views of shippers, and sales are at a stand. *Cotton*, in consequence of the late favorable news per the Britannia, has recovered the slight fall it experienced a week since. It is still above the European market. We have letters of a late date from our southern correspondents, giving a gloomy account of their picking throughout the valley of the Mississippi and its tributaries. Many estimate that the present crop will not exceed 1,600,000 bales; we remain firm in the conviction, however, that it will reach 1,800,000; the Carolina, Georgia, and Alabama crops not having suffered so much as those further west. Export from the United States since 1st September last 307,918 bales; same time last year, 600,696; same time year before 370,454. *Flour* and *Meal* are firm. *Corn* is scarce; all other kinds of grain in good demand, with the exception of *Barley*, which is out of season. *Hemp* is more brisk. *Molasses* firm. *Naval Stores* dull. *Provisions* the same. *Rice* in fair request. *Seeds* inactive. *Sugar* dull. *Tobacco* quiet. *Wool* keeps steadily advancing, and is likely to pay the farmer for several years to come, as good a profit, more especially the finer kinds, as anything to which he can turn his attention. The stock on hand is light. *Dressed Hogs* at Cincinnati $2.25 to $2.81 per 100 lbs. It is estimated that 200,000 have already been brought in to that market. The mild weather during January has been unfavorable for the killing season.

Money, owing to the banks making up their annual returns, is more in demand.

Stocks, for the same reason as expressed above have slightly fallen.

Real Estate continues to be offered without much improvement.

POUDRETTE

Of the very best quality for sale. Three barrels for $5, or ten barrels for $15—delivered free of cartage by the New-York Poudrette Company, 23 Chambers street, New York. Orders by mail, with the cash, will be promptly attended to, and with the same care as though the purchaser was present, if addressed as above to

Dec. 1, 1843.—3t. D. K. MINOR, Agent.

DURHAM BULL AND SOUTH-DOWN SHEEP.

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Enquire post-paid of the Editor of this paper.

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Mendham, Morris Co., N. J.

Jan., 1844.

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A small farm of 25 acres, pleasantly situated in Passaic county, New Jersey, on the turnpike from Newark to Paterson. It is 3 miles from Paterson, 4 from Bloomfield, and 8 from Newark. The soil is good, and about 10 acres seeded down with timothy and clover; 4 acres thrifty young wood; a well-built and substantial stone house on it, near which is a never-failing spring of the purest water running through the grounds; a good apple-orchard, and abundance of small fruit; also, about 60,000 Morus Multicaulis trees, which have stood the climate the last 6 years. This farm is well situated for raising fruits and vegetables for the New York market; being 14 miles from the Hoboken Ferry, and easy of access by both the Newark and Paterson Railroads. For particulars inquire of the Editor of this paper.

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One Lecture—On the Organic Food of Plants.

One Lecture—On the Mineral Food of Plants.

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A quantity of Machinery for the manufacture of Silk, is offered for sale at the State Prison, Sing-Sing, N. Y., consisting of looms for weaving broad silks and braids, together with engines and reels for making cords, winding floss, sewing-silk, and from cocoons; likewise a number of other machines used in the manufacture of silk.

This machinery is now in practical operation at the Prison, and was constructed under the immediate superintendance of an experienced and skilful manufacturer, who still has the works under his charge, and is offered at private sale, between this date and the 15th of February next. If not disposed of at that time, will then be sold at public auction in New York.

For further particulars apply at the Prison, to

WM. H. PECK, Agent.

Dec. 23, 1843. 2t

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